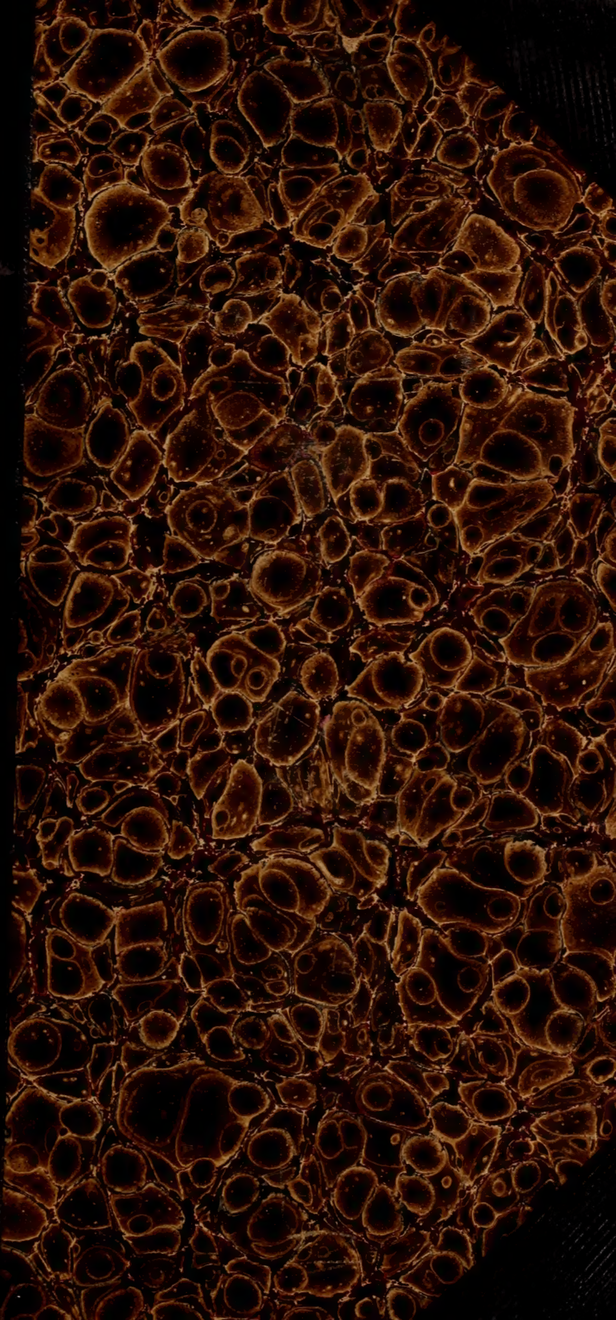


59465

EX·LIBRIS·COLL·MED·PHILAD·INSTIT·A·D·MDCCLXXXVII

NON SIBI SED TOTI

Class ________ No. ________

Presented by

H. H. Kynett, M.D.

$3.75

Digitized by the Internet Archive
in 2014

https://archive.org/details/gaillardsmedical7273unse

Want T.p.

60

Contents, Pages 7 & 9.

Advertisers' Index, Page 29

College of Physicians Library. Jan 2? 1900 Philadelphia

GAILLARD'S MEDICAL JOURNAL.

Scientia et Veritas Sine Timore.

Entered as second-class matter at the New York Post-Office
Published by the New York Medical Publishing Co.

EDITORS.

GEORGE TUCKER HARRISON, M.A., M.D.
SIMON BARUCH, A.M., M.D.
CARTER S. COLE, M.D.
E. GAILLARD MASON, M.D.

COLLABORATORS.

T. GAILLARD THOMAS, M.D., New York.
J. HERBERT CLAIBORNE, Jr., M.D.
D. BRYSON DELAVAN, M.D., New York.
HUNTER McGUIRE, M.D., Richmond, Va.
P. BRYNBERG PORTER, A.M., M.D., New York.

VOLUME LXXII. JANUARY, 1900. No. 1.

College of Physicians Philadelphia

APR 9 1901

"Its ability to stay down

is the big point in favor of LIQUID PEPTONOIDS," said a Canadian Physician.

Yes, this *is* a big point when the stomach rebels against all other forms of nourishment. In such cases Liquid Peptonoids is an ideal liquid food.

1 to 2 Tablespoonfuls.

THE ARLINGTON CHEMICAL CO.,
Yonkers, N. Y.

APR 9 1901

In Surgery and Gynecology,
In Diseases of the Respiratory System,
In Diseases of the Digestive System,
In Diseases of the Eye and Ear,
In Malarial, Typhoid and Eruptive Fevers,
In Genito-Urinary and Cutaneous Diseases,

and in the general antiseptic treatment of disease of every character, **LISTERINE** has established an enviable reputation, thorough clinical tests having demonstrated that no other one antiseptic is so well adapted to the general requirements of the Physician and Surgeon, for both internal and external use, as this carefully prepared formula of essential oils, ozoniferous ethers, and benzo-boracic acid—all antiseptics and chemically compatible.

LITERATURE ON DEMAND.

LAMBERT PHARMACAL COMPANY,
ST. LOUIS.
Sole Makers of Listerine.

Artificial Legs and Arms

MARKS' PATENTS of 1854, 1863, 1865, 1880, 1886, 1887, 1892, 1893, 1895, cover all the accredited improvements in artificial legs and arms, and make the Marks Artificial Limbs peerless. Rubber feet remove jar and make the stump-bearings easy. Rubber hands extend the limits of accommodation.

Light, Durable, Practical,

Do not get out of order, and inexpensive to wear. Appreciated by over twenty thousand wearers and thousands of surgeons.
The limits of the utility of Marks' Artificial Limbs are unbounded. Persons wearing them engage in every occupation and profession.

This cut is from a photograph of JOHN J. WINN, Signal Quartermaster on

"U. S. S. ONEIDA,"

who lost his leg above the knee, and arm above the elbow, by the explosion of a shell while the steamer was engaged in the attack on Forts Jackson and St. Philip, under the command of

ADMIRAL FARRAGUT,

April 22, 1862. The following letter tells what the old warrior knows about Artificial Legs and Arms:

A. A. MARKS:
DEAR SIR—I write you this simply to say that my experience with your Artificial Limbs, together with considerable experience with other kinds, induces me to prefer yours by all odds. The special point I desire to mention is the simplicity of construction in your leg, whereby I can take it apart, lubricate and adjust with my one (natural) hand, and put together again without any help. My good, solid weight of 240 pounds gives the leg a good trial, and yet I feel a confidence in it that I had never had in any other kind. Yours sincerely,
JOHN J. WINN.

Send for **Marks' Treatise on Artificial Limbs,** and become acquainted with particulars. The book contains 544 pages, 800 illustrations and a thousand testimonials. Instructions are given how to take measurements and obtain artificial limbs without leaving home.

A. A. MARKS, 701 Broadway, New York

29 Highest Awards.

Purchased by the United States and Other Governments.

GAILLARD'S MEDICAL JOURNAL.

VOL. LXXII. NEW YORK, JANUARY, 1900. NO. 1.

EXCISION OF HIGH RECTAL CARCINOMA WITHOUT SACRAL RESECTION.*

By N. SENN, M.D., Ph.D., LL.D.,
Professor of Surgery, Rush Medical College, in affiliation with the University of Chicago.

Since Lisfranc introduced his operation of excision of the rectum for malignant disease as a legitimate surgical procedure, a number of modifications have been devised by different surgeons for the purpose of perfecting its technic and of enlarging its sphere of application. Experience soon demonstrated that in the removal of a high carcinoma of the rectum, Lisfranc's incision did not furnish sufficient room to render the operation safe and effective. With a view of bringing the upper portion of the rectum, when the seat of malignant disease is within the reach of radical removal, Kocher advised and practiced excision of the coccyx as a preliminary step in performing the operation. Emboldened by the greater safety attending all operative interventions brought about by the general adoption of antiseptic and aseptic precautions, more extensive resections of the posterior bony wall of the pelvis were planned and carried into effect, for the purpose of securing additional room in the removal of malignant disease involving the upper portions of the rectum. Kocher was followed by Kraske, who first suggested partial resection of the last two sacral vertebræ. Kraske's sacral resection consists in cutting through the left half of the last two sacral vertebræ in the form of a curve inward and downward from the third to the fourth sacral foramina, and from here to the body of the sacrum. The sacral route to the rectum is generally known as Kraske's operation, although sacral resection has been carried much further by Bardenheuer, Volkmann, and E. Rose. Bardenheuer resects the sacrum from below as far as the third sacral foramen. Volkmann and E. Rose divide the sacrum transversely on a level with the second sacral foramen, and claim that opening of the spinal canal, which takes place in performing this operation, has seldom been followed by serious results.

Temporary resection of the lower portion of the sacrum was first introduced by Heineke as a preliminary step to the operation of excision of the rectum. This has been variously modified by different surgeons, but for obvious reasons has never become popular with the profession.

---

*From *The Philadelphia Medical Journal*, September 30, 1899.

Kraske's method, which found ready introduction in Germany, is almost unknown in England, and has never been extensively practiced in France. In America the sacral route has had a fair, but not extensive, trial. Opinions in this country are somewhat at variance in reference to the advantages offered by this method. The writer has resected the carcinomatous rectum by the sacral route in twenty-five to thirty cases. He has never resorted to temporary resection of the sacrum, and has always performed either the typical Kraske operation, that is, partial resection of the left half of the last two sacral vertebræ, or total resection of the last two sacral vertebræ. After an extensive experience with Kraske's method, the writer has become satisfied that the room gained by this operation is an inadequate compensation for the additional danger to life incurred. I have often been greatly disappointed at the gain in space furnished by the Kraske method in the removal of a high rectal carcinoma, and recent experience has convinced me that sacral resection is not only unnecessary, but absolutely harmful in all operations for malignant disease of the rectum.

I wish to place myself on record as being absolutely opposed to the sacral route in all operations for the radical removal of the carcinomatous rectum. The sacral route has been selected, of course, only in cases in which the carcinoma involved the upper portion of the rectum, but I am fully convinced by ample experience that radical operations can be performed in all cases justifying such a procedure without this additional trauma and mutilation. I have become satisfied that sacral resection constitutes an important item in determining the high mortality of operations for high rectal carcinoma. I have become equally well convinced that all legitimate and well-grounded indications for the radical removal of high rectal carcinoma can be met and ample room for performing the operation secured by a preliminary excision of the coccyx. In extirpation of the rectum below the peritoneal reflexion even the removal of the coccyx is superfluous. In excision of the upper portion of the rectum the peritoneal cavity must be freely opened, and in such cases ample space is secured by removal of the coccyx. If excision of the coccyx does not furnish the necessary space it is much safer to resort to the combined operation than to persist in creating additional space by sacral resection. I hope and trust that, at least in this country, the Kraske operation will soon become obsolete.

With the intention of placing my objections to the sacral route on a clinical basis, I have selected from my practice two cases of rectal carcinoma representing the two principal pathologic varieties of this affection as a text for this paper. Both of these cases were operated upon during the same week, more than two years ago. Both patients were females less than 40 years of age. In one case the disease involved the lower portion of the rectum primarily, and in the course of time involved at least 5½ inches of the rectum, without causing any serious mechanical obstruction. In the other case the disease had a high primary origin, and was characterized clinically by symptoms which pointed to mechanical obstruction in the lower portion of the intestinal tract. In the first case the excision necessarily included the sphincters of the rectum, and during the operation it was found impossible to bring the proximal end down to the level of the anus, and I had to establish a sacral anus, not as a matter of choice, but of stern necessity. In the second case the lower portion of the rectum remained intact, the disease had a high origin, enabling me to preserve the sphincters by making a circular resection and suturing the proximal to the distal end to the extent of uniting the anterior two-thirds of the circumference of the bowel. The detailed account of these two cases ought to satisfy any unprejudiced surgeon that sacral resection is destined to become an obsolete procedure in the near future in operations for malignant disease of the rectum.

A few words in reference to contraindications to radical operations for high rectal carcinoma. I regard as legitimate contraindications to such operations all cases in which the proximal limits of the tumor are beyond the reach of the index-finger, extensive involvement of the retroperitoneal glands and marked extension of the disease beyond the rectal wall, that is extensive infection of the pararectal connective tissue. In the absence of such positive contraindications I deem it probable that a radical operation can be performed without sacrificing any portion of the sacrum by limiting the resection of the posterior bony wall of the pelvis to removal of the coccyx.

Resection of Five and a Half Inches of Lower End of Rectum for Carcinoma, Including Sphincter; Permanent Coccygeal Anus; Recovery with Partial Control over Rectum.

CASE I.—Patient is a married woman, thirty-six years of age, of German parentage, and housewife by occupation. Family history negative. She has passed through the usual diseases of childhood, but otherwise has always enjoyed good health. She was married at the age of eighteen, and is the mother of four children, of whom three are living, aged respectively, fifteen, thirteen years, the youngest three months. Menstruation has always been normal, no indications of previous pelvic disease of any kind. She dates her present illness back to the summer and autumn of 1895, when she suffered from an attack of typhoid fever, which kept her confined to bed for six weeks.

Some time previous to this illness she was subject to occasional attacks of constipation, which were relieved by the use of laxatives. After she recovered from the typhoid fever these attacks became aggravated, and about one year and three months ago she discovered traces of blood and mucus in the fecal discharges. Pain which appeared about that time was most severe during defecation. The symptoms gradually increased in severity, the quantity of blood in the feces increased, being at times of a bright arterial hue, at others in the form of clots, variable in size.

A physician who was consulted made a diagnosis of hemorrhoids without making a rectal examination, and prescribed a course of treatment based on such supposition. For the last six months her general health has failed, and from that time a marked emaciation developed.

She entered St. Joseph's Hospital November 2, 1897. Examination of chest, abdomen and urine revealed nothing abnormal. Uterus and adnexa healthy. A rectal examination left no doubt as to the malignant nature of the rectal affection. From the margin of the anus the whole circumference of the rectum was studded with papillomatous masses to a distance of about five inches. Healthy mucous membrane and a normal rectal wall was within reach of the index-finger. The lumen of the rectum was somewhat diminished by the fungous masses, but there were no indications of cicatricial stenosis.

The carcinoma seemed to permeate nearly the entire thickness of the rectal wall and a few small indurated lymphatic glands could be felt in the mesorectum and between the rectum and the anterior vaginal wall. The surface of the affected part of the bowel was extensively ulcerated. With the exception of a few lymphatic glands the pararectal tissue appeared to be intact, a condition which encouraged me to recommend and perform a radical operation.

After thorough preparatory treatment the operation was performed November 5. A cot was used in place of an operating table. When completely under the influence of ether the patient was placed in the ventral position with the pelvis well elevated and the thighs and legs flexed and wrapped in a warm flannel blanket. It was the intention to remove the rectum completely at least an inch beyond the macroscopic limits of the disease. The operation was commenced by making an incision from the sacrococcygeal joint to the margin of the anus. The coccyx was next disarticulated and removed. After exposing the rectum the anus was circumscribed bv two semilunar incisions which included the sphincter muscles. The rectum was lightly tamponed with iodoform gauze during the enucleation. As soon as the lower end of the rectum with the sphincter muscles was liberated the lower end was tied with a strip of iodoform gauze for the purpose of preventing the escape of feces and to facilitate manipulation of the bowel during the remaining steps of the operation.

The separation of the surrounding structures and the vaginal septum was effected largely by resorting to blunt dissection.

Hemostatic forceps were used in arresting hemorrhage temporarily. Vessels of considerable size were secured by the same means before cutting them. No ligatures were applied before the excision was completed. After liberating the rectum from the vaginal septum as far as the peritoneal reflection from rectum to uterus, usually a distance of about two and a half inches, the culdesac of Douglas was opened freely, when it was found that the disease extended at least an equal distance above this point. The enlarged lymphatic glands behind the rectum in the hollow of the sacrum were carefully included in isolating the rectum by dividing the mesorectum near the sacral surface. The peritoneal cavity was protected against infection by the insertion of a dry gauze compress, which at the same time prevented all possibility of prolapse of the small intestines. As soon as the upper limit of the disease was reached the rectum was tied with a strip of iodoform gauze above the proposed line of resection. By making traction upon the gauze ligature the rectum was brought down as far as could be done without creating harmful tension.

The rectum was then removed by making a transverse section at least an inch above the tangible proximal limits of the tumor. The prolapsed mucous membrane of the rectum below the ligature was carefully disinfected. All vessels of sufficient size requiring ligation were tied with catgut ligatures. The tampon was removed from the peritoneal cavity and the parietal peritoneum was carefully stitched to the rectum with four or five fine catgut sutures. The proximal end of the resected rectum was stitched to the skin at a point about two inches below the sacrum after having reduced the lumen of the bowel to the desired degree by pursestring catgut suture.

The wound-cavity behind the rectum was tamponed with a long strip of iodoform gauze, which was brought out to the surface and properly secured with a safety-pin, immediately below the sacrum, and the wound below it sutured with silk-wormgut as far as the artificial anus, the last suture being made to include a part of the posterior wall of the rectum minus the mucous membrane. The cavity and wound in front of the rectum were treated in a similar manner.

The patient did not lose more than two ounces of blood during the operation, which lasted a little over an hour. At the completion of the operation the pulse was 115 per minute, with great diminution of its volume, a condition which necessitated the employment of cardiac stimulants. Brandy was given by the stomach and strychnia every four hours subcutaneously in doses of $\frac{1}{32}$ of a grain. Dry, external heat was also used in an endeavor to re-establish in as short a time as possible the normal peripheral circulation. Under this treatment the patient soon recovered from the immediate effects of the operation. Thirty-six hours after the operation the temperature, after a slight rise, was normal.

On the fourth day a sudden rise in the temperature led to the suspicion that the drainage was not satisfactory. The gauze tampons were removed and a copious discharge of pus followed. The cavities were flushed with a saturated solution of acetate of aluminum every three hours and tubular was substituted for capillary drainage. The next day the temperature was normal, after which flushing was practiced only once daily. An attack of diarrhœa yielded promptly to opium and astringents.

The patient made a rapid and uneventful recovery. The rectum became attached to the skin, the cavities rapidly diminished in size so that the patient was able to leave the hospital at the expiration of four weeks. During this time her general health improved materially, and when she left the hospital only a small fistulous tract remained behind the rectum, and she had recovered partial control over the rectum, being able to retain solid fecal stools the usual length of time. I have recently been informed by the family physician that so far there has been no recurrence.

Circular Resection of the Rectum, Suturing of the Proximal to Distal End; Temporary Coccygeal Anus; Recovery with Preservation of Full Use of Sphincter Muscles.

Case II.—This patient was a married woman, only twenty-nine years of age, American by birth, and housewife by occupation. Family history in reference to tuberculosis, syphilis and malignant disease negative. With the exception of the usual diseases incident to infancy and childhood the patient has always been in good health until about six years ago, when she commenced to suffer from constipation and painful defecation;

the pain being particularly severe at times when constipation became most obstinate. Since that time the solid fecal masses have been gradually diminishing in size, and during the last year diarrhea has been a conspicuous clinical feature, with absence of any well-formed stools. For a long time mucus in greater or less quantity has been observed constantly in the stools.

Symptoms pointing to chronic intestinal obstruction have been gradually increasing in frequency and intensity during the last six months. The patient's general health has been gradually failing, and the various kinds of treatment resorted to at different times have proved unavailing in affording anything but temporary relief. The last diagnosis made based on a rectal examination was cicatricial stenosis of the rectum.

The patient was admitted into the Presbyterian Hospital October 31, 1897. At the time of her admission she was anemic and considerably emaciated. The abdomen was tympanitic, and during the paroxysmal abdominal pains the intestinal coils, in a state of violent peristalsis, could be distinctly outlined on the surface of the abdomen. Examination of the urine and organs of the chest revealed nothing abnormal. Uterus, tubes and ovaries healthy. Digital examination of the rectum disclosed a tight circular stricture about four inches above the anus. The lumen of the bowel at this point did not much exceed the size of an ordinary leadpencil. It required a good deal of patience to pass the tip of the index-finger through the stricture sufficiently far to determine the extent of the disease. The stricture was surrounded by a solid, firm mass, which involved the entire thickness of the rectal wall and included the whole circumference of the bowel. Above the stricture the rectum was dilated; the mucous surface was the seat of a catarrhal inflammation.

The tumor, which involved about three inches of the rectum, was spindled-shaped, the center corresponding with the location of the stricture. The affected portion of the rectum was freely movable. Behind the tumor, and firmly attached to it, could be felt two hard lymphatic glands, considerably enlarged. By making a vaginal examination the tumor could be traced above the pouch of Douglas. The carcinomatous lymphatic glands could be felt most distinctly by dragging the tumor down and palpating its posterior surface. The examination left no doubt as to the carcinomatous nature of the stricture. The mobility of the rectum and the limited regional infection induced me to advise a radical operation.

The patient was prepared in the usual way for the operation, which was performed November 3. The first step in the operation consisted in removing the coccyx and in exposing the rectum below the stricture. At this point the rectum was separated from the vaginal septum. A gauze ligature was applied at least an inch below the tumor, and the bowel divided transversely below the ligature and about two and a half inches above the anus. Enucleation of the rectum was continued from below upward.

Gentle traction upon the ligature facilitated the procedure materially. Before the tumor could be reached the peritoneal cavity was freely opened, when the exact location of the tumor was indicated by a marked retraction of the peritoneal coat of the anterior surface of the tumor well up in the culdesac of Douglas. In isolating the bowel posteriorly the sacral curve was closely followed in order to include in the excision all of the infected glands. As soon as the bowel was sufficiently liberated to bring the tumor within easy reach, the peritoneal opening was tamponed with plain sterile gauze held in the grasp of a large hemostatic forceps. A strip of gauze was tied around the bowel above the proposed line of transverse section and the amputation made through healthy tissue.

The section of rectum removed measured five and a half inches in length and included three or four carcinomatous glands. The peritoneal cavity was closed with a number of catgut sutures, including the seromuscular coat of the rectal wall and the parietal peritoneum. Vessels requiring ligature were next secured when the two ends of the rectum were united with two rows of catgut sutures over the anterior two-thirds of their circumference, after which the gauze ligatures were removed and the remaining portion of the resected ends were sutured to the skin at a point about two inches below the sacrum, thus creating a temporary coccygeal anus. The cavities were packed with iodoform gauze and the incision sutured in the same manner as in the first case.

Sections of the specimens removed were later examined and the clinical diagnosis verified by the use of the microscope. In this case the operation was followed by little or no shock. Not a single untoward symptom appeared during the whole course of after-treatment. The iodoform-gauze tampons remained in place for a week, and at the time they were removed the cavities were found lined with a pavement of vigorous granulations. Four weeks after the operation the lower cavity was completely healed, the upper contracted to a narrow fistulous opening.

For four weeks all of the feces escaped through the artificial anus, after that time progressive contraction of the opening directed the fecal current toward the natural outlet guarded by the intact sphincter muscles. Two months after the operation the entire wound was healed and the artificial anus closed. The functional result in this case was perfect, and the patient left the hospital much improved in her general health. As I have heard nothing from the case since, the result of the operation remains uncertain, but I have reason to hope that no recurrence has occurred to date.

Suturing of the resected ends proved entirely satisfactory in this case, as the sutured part united by primary intention. The experience with these two cases has satisfied me that a radical operation for carcinoma of the rectum can be successfully performed without sacral resection in all cases in which the extent of the disease warrants operative intervention. I am equally convinced that sacral resection greatly adds to the mortality of the operation without furnishing an equivalent in space or without increasing materially the prospects for more lasting results. The combined operation is destined to take the place of sacral resection in all cases in which excision of the coccyx does not afford the required space to reach the proximal limits of the disease with safety.—From *Philadelphia Med. Jour.*, Sept. 30, 1899.

ON THE PHYSIOLOGICAL CHARACTER OF THE PAIN OF PARTURITION.*

By SAMUEL M. BRICKNER, A.M., M.D.,
Assistant Attending Gynæcologist, Mount Sinai Hospital, Out-Patient Department, New York.

Because the act of parturition, with very rare exceptions, is a painful one, some writers † have been led to assert that the pain incident to childbirth partakes of a pathological character, or that it is at least pseudo-physiological in its nature. To admit the truth of this assertion is to admit the pathological nature of parturition itself, no less than to concede that evolutionary forces have been at fault. If the statement is made in good faith, it merits scientific inquiry, especially since in all available literature no other reference than the one given can be found on either side of the question.

It may be well at the outset to state that the discussion of the sensation *pain*, as it occurs in parturition, must not be allowed to include the injuries inflicted in a normal or abnormal birth, nor the distress, the inconvenience, or the disadvantage of the attendant suffering. It is further necessary sharply to differentiate between the results of pain and mere states of being, since it is this fault which is responsible for the position taken by those who have inspired this study. Thus, they argue, the pain of parturition is distressing, inconvenient, and disadvantageous; it may be so severe as to give rise to permanent injury or to shock, or, occasionally, to psychosis. The functions of the bladder and rectum are not painful and are equally necessary and important. Hence the pain of parturition is not in harmony with physiological laws.

In order that we may be absolutely accurate, let us define the terms "physiological" and "pathological." By the former is meant the execution of an act in a manner in harmony with the purposes of the acting organ—that is, in a natural manner. "Pathological" may be defined as the execution of a function in a diseased way, or in a manner which is not in harmony with the natural purposes of the organ.

A brief sketch of the accepted functions of the organs concerned in parturition will help further to elucidate and to emphasize their physiology. The uterus receives the impregnated ovule from the Fallopian tube, nourishes it through the peculiar organs developed during gestation, preserves it from harm and injury, and at the time when it is able to thrive alone, by its contraction and retraction, forces it into the canal which connects it with the external world—the vagina. The cervical canal meanwhile dilates to its full limit to permit the passage of the child from the uterus to the vagina. Through the continued contraction and retraction of the uterine muscle, aided perhaps by the hypertrophied muscle of the vagina, the adult fœtus is still further expelled in its course toward birth. The child finally reaches the vulva, where a few combined contractions of the uterine, vaginal, and perineal muscles effect its delivery. This sketchy plan represents the physiology of birth in a normal, uncomplicated case. These various stages of the birth act are accompanied by pain on the part of the parturient female of all the species of vertebrate mammals with which we are acquainted. The whole process of reproduction, indeed, from the beginning of the courtship by the male, through conception, parturition, and nurturing of the young, is strikingly the same in all mammals (Darwin). Among mammals, further, we know that there is no other means of carrying out these important functions. The process itself is undeniably physiological, then, in that it is natural and is the only manner in which reproduction can take place in mammals.

---

*Read before the Metropolitan Medical Society, September 26, 1899.

†S. Marx. The Management of Normal Labor, *New York Medical Journal*, February 25, 1899.

Although parturition is more difficult, and hence more painful, in man than in the lower animals, especially the quadrupeds, the latter do not go through their labors painlessly. Cattle breeders and horse breeders furnish abundant evidence on this point. Darwin, quoting from the Proceedings of the Zoological Society for 1871, tells of the female hippopotamus in the Zoological Gardens, which, when she produced her young, suffered greatly; she incessantly walked about or rolled on her sides, opening and closing her jaws, and clattering her teeth together. We find, too, on the authority of good observers, that animals kept in domestication have difficult and sometimes dangerous labors and not infrequently require assistance. The difficulties and dangers attendant upon parturition in the human species can not be accounted for alone on the ground of culture and civilization. Although savage races are reputed to give birth to their children while on the march, and are said to suffer less actual pain in the act of parturition, we have some excellent authority to the contrary. Professor Franz Boas, the widely known anthropologist, who has had much experience among the Eskimos, has told me that the women of the tribes suffer from the pangs of childbirth as severely as the women of the white races. They make less of their pain, however, being of a phlegmatic temperament, and their susceptibilities to pain of all kinds being lower than those of the inhabitants of the more temperate zones. From the observations of many writers we know that faulty positions are not uncommon among the less civilized peoples, and the treatment of these conditions among the primitive tribes forms one of the most interesting obstetric chapters. Since civilization does not alone prescribe the limits of painless or easy confinements, we must seek the cause of the difficulty and pain of human labors in man's anatomical structure. Here we find elements which are of a determining character. The upright posture of man, calling for a compact and well-knit pelvis, distinguishes him from the quadrupeds. The perinæum in man is called upon to bear the weight of the viscera, and thus offers great resistance to the parturient forces at the time of labor. The pelvic canal is almost straight in the lower mammals, while in man it is curved. In the quadrupeds the head of the fœtus passes the sacrum before it reaches the resistance of the pubic bones; and when it is opposed by this bony structure the freely movable cauda is at the opposite pole to reduce the resistance.

If we add to these elements the movable sacro-iliac joints, the frequent separation of the pubic bones, the weakness and consequent easy stretching of the perinæum—because it is not obliged to support the abdominal viscera—we have abundant anatomical reason for the easier parturition of the lower mammals. But even with these advantages, the quadrupeds, especially those of a higher grade of development, are not free from the pain of parturition, for evidence on this head is overwhelming. If, indeed, the pain attending parturition were confined to man alone, there might be some justification in assuming that in the course of his descent some factors had made him more susceptible to pain than were his ancestors; or that his endurance of pain had become minimized. This we find not to be the case. Other mammals offer to the contrary convincing data, and man appears to be able to endure physical pain as well as lower animals. This can be seen in the endurance of pain in soldiers and in those whose susceptibilities have been lowered by their manner of life. Martyrs at the stake seem to disregard their physical pain in the ecstasy of patriotic or religious frenzy. The mental condition of the parturient woman may be compared to that of the soldier on the battlefield or to the martyr at the stake. The elation and excitement incident to maternity, the love of offspring natural even to the most depraved, the innate, uncontrollable desire to suffer for the good of the species—these factors are important in helping her endure the pain which is unavoidable. It has always seemed to me, too, that women giving birth to illegitimate children appear to suffer more actual pain in childbirth than their married sisters, to whom the advent of a child is less of a disgrace if not always more welcome.

It would be illogical, in the light of modern biological work, to attribute temporary or permanent benefit to physical pain; for all evidence goes to show that organisms receive vital force—which may be translated into benefits—from those things which are pleasurable, while they are depressed by acts, necessary though they may be, which are painful. They may, indeed, receive permanent injury from the latter in so far as the sum total of vital force is concerned. Yet we know that in both the animal and the vegetable worlds reproduction is achieved only by the expenditure of energy, the sacrifice of strength or nutrition, or both, on the part of the parent forms. It will not be denied that the female, in a biological sense, is designed mainly for procreation. The mere fact, therefore, that in the act of so doing she gives up energy in the form of pain does not militate against the naturalness of parturition, for she but conforms to the general law. Further, we may assume that as each individual exists for the benefit of the species—though not in the sense of Schopenhauer—pain undergone for the benefit of the species is not detrimental to or antagonistic to the species. We see the most beautiful examples of sacrifice for the species in some of the lower forms of protozoan life, as in the gregarina, which reproduces itself by resolution into a multitude of still more minute masses, completely losing its identity as a parent. Among some of the infusoria similar phenomena of encystment, rupture of the envelope, escape of numberless minute offspring, and, of course, complete obliteration of the parent take place. In these instances the death or complete annihilation of the parent occurs for the sole purpose of reproduction. Low as these forms are in the scale of life, the same genetic principle applies to the higher forms; and we may well assume that the pain experienced by mammals in parturition is an exemplification of this principle. And what is natural, first, and common to all species, secondly, can not be pathological in the sense in which we are accustomed to use the word.

Let us now regard this subject from another view by taking a short survey into the causes of pain in the act of parturition in the human female. We find that the pain is due to two factors which are so integral a part of the birth act as to be inseparable from it: First, the stretching of the parts; second, the efforts of the uterus against resistance. These two elements are not distinctly separable during parturition, for the uterus is working against resistance of the soft parts at the same time that these are being dilated for the passage of the fœtus. The first element in the genesis of pain lies in the stretching of the cervix, and is due to the dilatation and the tension of the cervical attachments. This pain is referred by the parturient woman to the lower lumbar and sacral regions, a fact in consonance with clinical experience; for we find that pain originating in the cervix, or caused by moderate or severe irritation of that part of the uterus, is mainly referred to these spinal regions. A little later, when the uterine muscles begin to exert pronounced effects, the uterine attachments are put upon the stretch as the fœtal head advances and encounters the resistance at the pelvic brim. Each effort of expulsion is then accompanied by pain arising from the tension of these attachments. As labor still further advances, the vagina and the vulva must be stretched for the passage of the fœtal head and shoulders. These are more sensitive than the other parts of the genital tract involved in the act of childbirth and the pain toward the end of labor is, therefore, usually intense, amounting at times to the keenest agony as the head passes over the perineum.

The pain evoked by the contractions of the uterus against the resistance of the soft parts which the fœtus must traverse must next be considered. This pain may or may not be proportionate to the degree of resistance encountered. In primiparæ the resistance is usually greater than in women who have previously borne children, since the soft parts have not been stretched before. Multiparæ, however, who have weakened or atonic uterine muscles *because* they have been through the process of parturition, may suffer greatly; for, although the soft parts offer less resistance, the uterine muscles are not equal to the task before them. We see, then, that the agonies of parturition are due to factors which are inseparable from the act of birth, and are to be traced to purely physical causes dependent upon the anatomical structures involved. Assuming that it is granted that the manner of giving birth is free from pathological features, it follows as a corollary that incidents inseparable from it must also be devoid of pathological significance. And it is important to recognize that injuries incidental to parturition, whether these take place in a normal or in an abnormal position or presentation, are separable and distinct from the pain proper, and can not, therefore, be logically assigned as pathological causes of pain in labor. Temporary mental disturbances appearing post partum and shock have been attributed to the pain of parturition. Although it is likely that other factors were responsible for these pathologic sequels, the contention may have a basis of truth. I will admit it, at least, for the sake of argument. But in the former case mental aberration will usually be found dependent upon a vicious heredity, and shock may easily supervene in an otherwise uncomplicated case in an organism debilitated or especially susceptible to influences which in another body would be productive of no untoward symptom. However, the proper position to hold at the present time with regard to the unusual disturbances of pregnancy and the puerperium is, that these are not to be regarded as entities due solely to the functions of gestation and parturition, but as incidents thereof, these functions playing no ætiologic rôle, or, at most, an inferior one.

As we have seen, the pain of childbirth is due to factors which have to do entirely with the birth canal. It is notorious, however, that it is no greater nor more difficult to bear when this canal is narrower than it should normally be, or when the child's position is such as to render a birth more difficult than usual, although under these conditions the pain may be of longer duration because the act is longer in point of time. This delay, in fact, partakes of a physiological character, since it is due to the effort which is making for the adaptation of the child to the unusual or difficult passage furnished for its exit from the uterus.

The contention that, of all the functions of the body which are important and necessary, parturition is the only one which is accompanied by pain, and must, therefore, be non-physiological, is not, it seems to me, well grounded. The important functions of the bladder and rectum have been especially cited in the comparison of physiological functions as being free from pain. In the first instance, the vesical and rectal functions must be performed so frequently that severe pain—or, for that matter, any pain—in their execution would so work to the detriment of the organism that the continuance of life would be a great struggle. They are functions, further, which have to do with the vegetative life of the *individual,* and have no bearing on the life of the species, as has the overwhelmingly important function of reproduction. Compared with the multiple performances of purely vegetative functions, that of genesis is an exceedingly rare occurrence. Moreover, the vesical and rectal pouches are easily opened under physiological conditions, there being no necessity for their remaining closed until the waste products they excrete attain a certain development, as we shall see is the case with the uterus and its fœtus. It is no argument of strength, although it is an alluring one, to contend that because most bodily functions are painless, painful ones bear pathological stigmata.

A logical necessity for the tightly closed parturient canal, with its enforced dilatation at the time of birth, lies in the protection afforded thereby to the fœtus during the entire period of gestation. Were it otherwise, the impregnated ovule would escape from the uterus soon after conception, or at once, and would perish. Among some of the lower forms of animal life in which uterine development is not possible or necessary we find the immediate escape of the ovule the rule. In sponges, polyps, and some of the coral animals the mature cells are simply ejected through the mouth opening from the intestinal cavity, or they pass out through the outer skin opening—as in the case of the hydra—or through an opening in the ventral wall specialized for the purpose. Indeed, this is the case in forms as high as worms, and even in a few of the vertebrated animals, as in the cyclostoma and a few of the fishes. But the impregnated ovule of the higher animals, including man, can not live outside of the body of the mother until a certain development has been reached. To secure to the fœtus the necessary protection, the birth canal, therefore, remains closed until this development has been accomplished. This means increase of size and subsequent dilatation of the genital tract to secure birth. Because this necessary stretching is combined with pain by no means proves its pathological character; for, from the too brief sketch just given, it is evident that the dilatation is not only in harmony with natural laws, but has a deep physiological significance, since it is an inseparable accompaniment of a process which from its inception is destined to produce a new individual in a manner at once safest, most protective, and most economical; in other words, in a manner economical to the species and safe to the mother and the offspring.

The very character of the painful uterine contractions—one of the main sources of parturient pain—is so beautifully adapted to the needs of mother and child that their physiological nature is self-evident. Were it not for the intermittent nature of these contractions the parturient woman would be unable to endure the tremendous muscular strain called for, and would become exhausted before the birth of her child. The fœtus, too, would perish in its birth from the cessation of the placental circulation due to the constriction by uterine muscle fiber. Pathologically, indeed, we find this actually to be the case.

It is granted among students of biology and ethics that physical pain is a stimulant to action. A common example may be cited in the fact that when we wish a horse to exert himself we whip him. Exhausted dray bullocks in India and Abyssinia are horribly tortured to rouse them to renewed effort. So in the female, the pain evoked during the second stage of labor is an incentive to further effort to get rid of her young. The action of the abdominal muscles, which play a very important part in the expulsive forces of the second stage, is a voluntary one. Under the stimulus of the expulsive efforts they act automatically, but can still be held under the control of the patient. Even in the agony of the final pains the woman, by opening her glottis and screaming, can suspend the action of these muscles. This has well been called by Tyler Smith the safety-valve action of the glottis. But women do not, as a rule, attempt to control these muscles. They "bear down," as it is called, and follow the instinct to do so naturally. The expulsion of the fœtus is facilitated by this tremendous *vis a tergo*, which still remains voluntary, although it is automatic. We may attribute the action of the abdominal muscles to two causes: 1. To the natural, therefore physiological, efforts at expulsion. 2. To the stimulant effect of the pain inducing a voluntary, though at times automatic, added effort to get rid of the pain-producing element, even though greater pain is caused by the muscular action. We might add as a corollary to this that those women who have inefficient pains—

that is, poor contractions of the uterus or the abdominal muscles—have less pain than those whose contractions are vigorous, and their labors become pathological and end usually by artificial assistance.

There is still another reason, partly physiological, partly biological, for assuming that the pain of parturition is of a truly physiological nature. This is the lack of the revivability of the memory of the pain. The pain of other agonies is, as a rule, keenly remembered; but it is notorious that women forget the pain of parturition within a few days or weeks of its occurrence. This is in accordance with the views we have taken of the pain, for from the biological standpoint it is important that the pain should be forgotten, or at least its agony, lest its presence in the memory be a deterrent from further efforts at procreation. This inability to recall the pain of parturition is, as well, a proof of its physiological character, as it is equally well known that pain of a pathological nature, or one evoked by a pathological process, is subsequently easy of description and is not lost in the memory.

To consider in detail the steps by which the mammal has reached his present mode of reproduction would lead us too far afield. We have seen, discussing the necessity for a closed parturient canal in the mammal, that almost all conceivable methods for the expulsion of the mature fœtus exist among animals. Interesting as the subject is, we can not now consider the multiple varieties of reproduction, beginning with simple fission and ending with the birth of a human being. But in the course of the evolution of these processes—from the simple fission to budding, then of the budding of a particular part, next the placing of the budding organ in an interior cavity for greater safety, then increasing complexity of the reproductive organ, finally sexual reproduction, with its wonderfully manifold variations—in the course of the evolution of these processes, I repeat, the mode of inclosure in an internal uterus, as we know it in the human female, was evolved as a true variation. It may be objected to with some show of truth that, if the variation is a true one, its function should not be accompanied by pain. But Darwin himself, in the discussion of the laws of variation, states the significance of correlation. And he has shown conclusively, I think, that many modifications are of no direct service to the individual, having arisen in correlation with other useful changes. Expressed in the terms of our discussion, this means that the pain which is incident to labor stands in direct relation to the manner of birth, the method of birth, again, being a useful modification or change—useful to the species, since its continuance is subserved; useful to the new being, since its safety has been conserved.

I regret that I can not go more deeply into this subject on the present occasion, for I have but scratched the soil. I hope, however, that I have adduced arguments sufficiently lucid and strong to prove that our conception that the mode of reproduction in mammals is physiological is correct and scientific. Briefly summarized, these are my contentions in behalf of this view:

1. What is natural can not be pathological. The functions of the uterus are natural, and include the reception of the impregnated ovule, its nourishment and retention until development is complete, and then its expulsion.

2. During the intra-uterine life of the fœtus the parturient canal remains closed for the protection of the fœtus. Its dilatation at the time of labor is painful because sensitive parts are stretched. The pain is, therefore, inseparable from parturition. Parturition being natural, it follows that inseparable incidents are also natural.

3. This pain is common to all animals which give birth to their young from a uterus with a placental attachment.

4. Compared with other important functions, parturition is a great rarity. If the commonly repeated functions were painful, the species could not continue its existence. There would be no gain in having the vegetative functions painful. The one is in the life of the individual, the other in the life of the species.

5. The uterine contractions are chief among the causes of the pain. Their intermittent character, which provides safety for mother and fœtus, proves their physiological nature.

6. The pain of parturition in the second stage is a stimulant to renewed effort for the expulsion of the fœtus.

7. Lack of revivability of this pain in the memory soon after its occurrence, while pain of another character is easily remembered, proves its biological importance.

Works Consulted.

Edward Clodd. "The Story of Creation."
W. R. Dakin. "A Handbook of Midwifery."
C. Darwin. "Origin of Species," "The Descent of Man," "Expression of the Emotions," "Animals and Plants under Domestication."
Thomas Denman. "An Introduction to the Practice of Midwifery."
Frank P. Foster. "Encyclopædic Medical Dictionary."
Michael Foster. "A Text-Book of Physiology."
W. E. Fothergill. "Manual of Midwifery."
G. Ernest Herman. "Difficult Labor."
Ernst Haeckel. "Generelle Morphologie, The Evolution of Man."
Charles Jewett. "The Practice of Obstetrics by American Authors."
David S. Jordan. "Footnotes to Evolution."
Joseph Le Conte. "Evolution."
Henry R. Marshall. "Instinct and Reason."
W. F. Montgomery. "The Signs and Symptoms of Pregnancy."
W. S. Playfair. "A System of Midwifery."
Heinrich Ploss. "Das Weib."
Herbert Spencer. "Principles of Psychology," "Principles of Ethics," "Principles of Sociology," "Principles of Biology."
And a number of minor works on obstetrics, zoology, and biology.

136 West Eighty-fifth Street.

PNEUMONIA, AND ITS TREATMENT.*

By THOS. M. RIDDICK, M.D., Woodville, N. C.

I am conscious of the fact that in selecting pneumonia as a subject for this paper I have chosen, perhaps, a hackneyed theme, for just as the small boy's "Casabianca" is ever present on declamation day in the district school, just so pneumonia plays its role in most every medical society meeting as a subject for debate. And why should it not do so? Is it not a malady of very frequent occurrence in our practice, especially in mid-winter and early spring; and is there any affection in the whole catalogue of complaints which at times presents more formidable features at the bedside, or taxes more severely the best therapeutic resources of the man of medicine? Besides, the views entertained by physicians as to its management and treatment are varied, and at times divergent, and this paper is presented more for the purpose of eliciting the practical views of others than that of any hope or expectation of teaching remedial measures that are new.

I shall purposely omit any lengthy descriptive reference to the causation and pathology of this disease, for I take it that you are all more than familiar with these features.

The treatment of the disease—the means by which a pneumonic seizure with the collateral troubles can be best combatted and controlled—is the point of most practical importance to the practitioner.

As the croupous or lobar form is the most frequently met with in practice, the views herein advanced will have reference to the management of that type.

The clinical picture presented at the bedside, when called to see a typical case, is like unto this: An initial chill has ushered in the attack. This is almost an unvarying rule. For the most part, there is a history of previous exposure to sudden and unfavorable vicissitude of temperature, though there are cases where this is not the case—traumatic pneumonia, for instance. The chill is followed by pronounced elevation of temperature. Often there is severe pain over the affected side. In the earlier stages a dry, hacking cough, often irritative in its character, appears. The expectorated matter is white and frothy at first, but as the case progresses the characteristic brown, rusty sputum is present. The bronchial mucous membrane is dry and deficient in secretion, and the patient experiences no little difficulty in detaching and expelling the expectorated matter. Respiration is quickened—accelerated—and there is great disproportion between it and the pulse rate. The decubitis is dorsal, with a leaning toward the affected side. The face is flushed, particularly the cheeks. The breathing is shallow, husky, catchy. The expiratory grunt or moan is often heard. The facial expression is aften anxious, though there is almost a pochrognomonic brightness in the eyes. The debility and prostration are very marked. Efforts at coughing are accompanied by stabbing, lancinating pain, especially so if there be any coexistence of pleural inflammation. The temperature runs from 103° to 105° F., or even higher, varying with the virulence of the attack. The pulse is rapid and bounding, especially so in stenic cases. After consolidation has set in the percussion note is dull and flat over the diseased area, and auscultation shows crepitant rales. The vesicular murmur is feeble, the breathing harsh and blowing. The secretions are checked and in abeyance. The urine is scanty, high-colored, deficient in chlorides and ofttimes albuminous. Hemotysis is not infrequent. As the disease progresses the cardiac action becomes feeble and ofttimes irregular in the aged.

---

*Read before the Seaboard Medical Association, 1899.

In short, the diplococcus of Fraenkle, the specific factor in setting up this affection, has found a fostering nidus or habitat in the lung tissues of the patient, and the toxines which it generates have produced their full and characteristic effect.

Now, what are the indications for the relief of the patient?

The freeing of the affected lung of the products of inflammation, both by resolution and expectoration; the support of the overtaxed and flagging heart, the control of excessive pyrexia, the bold and generous nutrition of the enfeebled system—the activity of the emunctories, and the maintenance of a uniform temperature in the sick-room, together with the comfort and quietude of the patient, are all cardinal features which demand our careful and earnest attention.

Calomel is an agent of much worth in pneumonia. That drug meets several requirements. First of all things it arouses the torpid glandular system, starts up the secretions which have been checked or depressed, opens the bowels and cleanses the alimentary canal. Its therapeutic properties are well known, and it has decided antiphlogistic action and prevents the formation of fibrinous exudates, too. It should be followed with magnesium sulphate in somewhat concentrated solution, which, by its depletant action, further favors absorption.

A cantharidal blister or hot turpentine stupes applied over the affected side is a *sine qua non*, in my humble judgment. That not only lessens in a measure the engorgement of the over-distended pulmonary blood-vessels, but is also a most efficient auxiliary in inaugurating the process of resolution, which we are always anxious to establish. Should there be any coexistence of a painful pleurisy the blister will be found to give great relief to the suffering patient. I have seen its beneficent action in too many cases to lend the ear of credulity to those anti-cantharidal brethren who deprecate its use. The chest should always be protected, an oiled silk jacket being excellent for the purpose, though in country practice is not always available

Quinine, because of its antipyretic, tonic, and anti-inflammatory properties, finds a special and peculiar field of usefulness in pneumonia. To an adult I exhibit it in doses of four grains every four hours, and sometimes give acetanilid in half the quantity with it if the fever be high. That generally keeps the temperature within a safe and reasonable limit. To push too far any of the antipyretics that depress the cardiac action is injudicious practice, since cardiac debility is always a standing danger that confronts the physician in pneumonitis.

To buttress and support the flagging heart nothing is better than strychnine nitrate, and to that I sometimes add tincture of digitalis, though the latter drug should always be given with caution, especially in the aged, where there are often contraindications to its use. Strophanthus is an admirable substitute for it in some instances. Alcohol, in the form of hot milk toddy or eggnog, is of great value, and at the same time liquid peptonoids or animal broths should be freely given to control the marked debility that characterizes pneumonia.

The proper regulation of the bowels, and the full and free action of the kidneys are features which should not be overlooked. Should uremia at any time supervene, I should not hesitate to use pilocarpine as a diaphoretic in stenic cases, together with the hot pack and the diuretics generally given. Cupping over the kidneys, with fomentations of buchu leaves, are all of value in such a complication.

The dry and hacking cough, which is always a fruitful source of disquietude and annoyance to the patient, must not be overlooked. Ipecac, glycerine, ammonium carbonate, and ammonium chloride, properly combined, make an excellent expectorant. That starts secretive activity in the dry bronchial mucous membrane, and makes the expectoration full and free. I do not like the employment of opium in any form of pneumonia, if it can be avoided, for that drug retards rather than promotes secretion, suppresses the cough, and the objective point is always to free and open up the obstructed air passages. To produce sleep I prefer trional with sodium bromide, and if there be much restlessness, chloral hydrate is a most excellent hypnotic with many patients, but its depressant action upon the heart must ever be borne in mind.

The uniform regulation of the temperature of the sick-room, and the prevention of further taking cold on the part of the patient, are important considerations. For that reason I am dubious as to the advisability of applying ice applications to a patient suffering with pneumonia, though that ancient view of mine may cause me to pose as a medical hayseeder among many modern and progressive gentlemen. Theoretically, the practice is pretty and plausible, but the actual results I should fear. Perhaps there is no point in practice where there is such a divergence of opinion among doctors as on this. In country practice that form of medication, if attended with unfortunate results, would subject the medical attendant to great criticism and reproof. The laity has not yet been educated up to that therapeutic standard in the rural districts.—*Southern Med. Jour.*.

TREATMENT OF THE PYREXIAS BY CHEMICAL ANTIPYRETICS.*

By F. A. LONG, M.D., Madison, Neb.

The Brand method is universally recognized by medical men as the ideal method of treating fevers; and in various ways, each successful to a degree, all practitioners use hydrotherapy in daily practice to overcome excessive temperature. The conveniences for applying the Brand method being at hand in hospital practice, nothing is left to be desired. The same, in a modified sense, may be said of practice among the well-to-do, especially in cities, trained nurses being employed to care for the patients: and it is just possible that the thousand and one little things which the trained nurse does for the comfort of fever patients are all credited to the Brand method of immersion.

---

*Read before the Nebraska State Medical Society, Lincoln, Neb., May 9, 10 and 11, 1899.

Recent literature†—on typhoid fever, for example—voluminously and with great detail gives the technique of the Brand method and its wonderful results, and practically dismisses the subject with that.

Now, it is pretty generally understood that doctors engaged in general practice work under difficulties arising from want of conveniences and the almost invariable absence of trained nurses, and very frequently the want of any nurses whatever; and that in the treatment of fevers the Brand method, while not wholly inapplicable, theoretically, is practically so; and that, while as a compromise between hydrotherapy and nothing, spongings and packs are highly practical, they do not meet all the requirements in the way of treatment; and that the general practitioners, outside of hospitals, and those engaged in country practice in particular, need and do employ chemical agents to control hyperpyrexia. We may as well confess that whatever the teachings of the books may be, the general practitioner, averaging fairly well in intelligence and resources with his brother, the hospital doctor and book-writer, finds ways and means peculiarly his own, and adapted to his environs, to battle with disease. The observations and experiences of the general practitioner are valuable, and are entitled to as much consideration as are those of his more favorably situated brother. As a rule, the great mass of the profession in bodies like this is silent, perhaps overawed by those who hold professorships and hospital appointments. There is no doubt that at the present time a large majority of general practitioners use chemical antipyretics with results satisfactory to themselves and their patients; and this paper is presented in justification of this practice, and as a protest against the implied ignorance or criminality of such practice, coming from the hospital doctor.

Dr. J. C. Wilson‡ condemns internal antipyretics in typhoid, because "the extensive depression of temperature following their use is transient and associated with unfavorable symptoms, such as excessive sweating, cardiac depression, and a tendency to collapse; and, furthermore, the effect of these drugs—acetanilid, antipyrin, and phenacetin—on the course of the disease is far from favorable." Why, or in what way, he does not say. This argument is followed by directions for applying the Brand method, in part, as follows: "Upon entering the bath the patient receives an ounce of spirits or half a glass of red wine. If, after taking the bath, for any cause reaction is retarded, the patient should at once be dried beneath the blankets, a hot toddy administered, and have hot water bottles placed to his feet." Without in the least attempting to cast aspersions on the hydrotherapy of typhoid fever, the above quotations appear to me to be a confession of weakness and of uncertainty of effect in the method, almost if not wholly parallel with the objections urged against the use of chemical antipyretics. No one will seriously question the assertion that the "excessive sweating, cardiac depression, and tendency to collapse" asserted to follow the use of acetanilid, antipyrin, and phenacetin could be wholly overcome in each and every case if the patient should receive "an ounce of spirit or half a glass of red wine" to counteract that depression before giving the antipyretic drug.

---

† American System of Practical Medicine.

‡ American System of Practical Medicine.

Dr. J. M. Anders, in his recent very excellent work on "Practice," is more reasonable. He says: "When the Brand method cannot be employed, internal antipyretics are allowable, if properly administered." These last three words seem to me to be the key to the whole argument against internal antipyretics. He further says, "the heart is to be guarded by stimulants when internal antipyretics are administered." The profession will bear out the assertion that the bad effects following the use of internal antipyretics have been grossly exaggerated, if the drug is administered according to the formula given by one of the old masters for mixing colors—with brains! I have used internal antipyretics to control high temperature extensively for eight or ten years without any noticeable ill effects following the use of the drug, if administered according to directions. In a case of typhoid fever in an adult, if the evening temperature runs above 102.5, and it usually does, acetanilid in three to five grain doses, according to the size and temperament of the patient, is given hourly till perspiration appears, or the body becomes noticeably cooler, without perspiration, from about noon to midnight, the period of highest fever. Directions are given, that in case of unusual depression following, a cup of strong coffee or tea shall be administered and hot irons applied to the feet. Rarely, indeed, in my experience is such emergency treatment called for. Alcoholic stimulants are rarely advised. The reduction of temperature, and induction of free diaphoresis is usually prompt, and is generally accompanied by relief of the headache, delirium, or dullness, and a feeling of comparative well-being, so decided as to usually elicit an expression from the patient to that effect. The patient who has been wakeful or delirious will fall into a tranquil sleep, awakening therefrom refreshed.

Phenacetin is preferred by many, being said to be less depressing than acetanilid, and a number of my neighboring co-workers who have used both consider phenacetin vastly superior to acetanilid on this account. The literature of the subject tends the same way. I have confined myself almost wholly to acetanilid and have become so used to its dosage and effects that I am loath to make a change. It is a universal experience that one physician will have better results by the use of a given drug than will his neighbor, equally skillful as a physician.

It is claimed for the Brand method, that after six or eight baths, the headache, delirium and stupor cease, the patient falls into a natural sleep, from which he is easily aroused, often with a bright expression, and a clear mind; that tremor and subsultus are rare; and that the tongue cleans off and becomes moist, anorexia becomes less marked, tympanites is rarely seen and troublesome diarrhea is rare.

Almost, if not quite as much, can be said for the internal antipyretics, if at the same time small doses of calomel or other cholagogues and laxatives, if needed, are given. The great emunctories, the skin, the kidneys, the liver, and the intestines, need to be kept active.

We know that the typho-toxins are eliminated in part by the kidneys, and it is reasonable to believe that they may also be eliminated by the skin, and I believe that the profuse sweating following the administration of internal antipyretics is directly beneficial in this way. Anders says: "Internal antipyretics soothe and moderate the nervous symptoms and act more or less potently as antiseptics." Whatever may be the truth about the so-called antiseptic treatment of typhoid fever, it is certain that antiseptics exert an inhibitory influence on fermentation of gastric and intestinal contents, and that in ulcerated and catarrhal lesions of the bowels intestinal antiseptics are most valuable. The antiseptic properties of acetanilid and phenacetin are well established, and by such action, in addition to the antipyretic effects, they also inhibit fermentation, to which in great measure tympany and diarrhea are due, and produce a favorable influence on typhoidal ulcers when developed.

It is certain to my mind that the mortality of typhoid fever, where internal antipyretics are used, is due, not directly to "excessive sweating, cardiac depression and collapse," but to the other more ordinary causes which obtain with any method of treatment—hemorrhage, perforative peritonitis, etc. Neither is the course of the disease prolonged, for it is rare that the upward tendency of the fever continues beyond from fourteen to twenty days, at least in North Nebraska, and the patients are usually up at the end of four weeks, and they recover strength rapidly.

That the coal-tar antipyretics are admissible in fevers and can be administered without harm, by a careful physician, I have repeatedly demonstrated in my own practice, as I have no doubt most of those in this audience have.

In all the essential fevers internal antipyretics may be used to good advantage without endangering the patient. In the high temperature of pneumonia, accompanied by restlessness and rapid breathing, prompt relief is afforded by one or two doses of acetanilid or phenacetin. The irritating cough, so frequently an accompaniment of the high temperature, usually subsides with the fall of temperature. Stimulants are, however, called for if antipyretics are given in pneumonia, except in the earliest stage. It is the most eligible drug that can be given to prevent the recurrence of the convulsions of children, due to high temperature, after thoroughly emptying the gastro-intestinal tract.

In inflammatory rheumatism, acetanilid or phenacetin may be given with salicylate of soda, and will relieve the pains as promptly as it reduces the temperature. Nothing in my hands has ever given me the satisfactory results in inflammatory rheumatism that a special tablet containing $2\frac{1}{2}$ grains each of acetanilid and salicylate of soda, $\frac{1}{4}$ grain of caffein and $\frac{1}{12}$ grain podophyllin, has. Two tablets are given hourly till the temperature is reduced, and the pain relieved, and two every three hours afterward, for several days after the disappearance of the painful manifestations of the disease.

◆

USE OF THE IRON OF BLAUD'S PILL.

In a recent communication of Dr. William Henry Porter[1] to the New York County Medical Society an effort was made to solve the problem of iron medication, in view of recent experiments that appear to demonstrate that inorganic iron is never absorbed by the healthy membrane of the intestinal tract, and that, when through an injured surface iron enters the blood, it acts as a foreign body, to be gotten rid of as quickly as possible.

Dr. Porter finds in vegetable nucleo-albumin the source of all the available animal iron obtained from the vegetable world. The intake and output of iron by the system is, comparatively speaking, very small; the iron in organic combination, commonly found in the foodstuffs as nucleo-albumin, is the only source of iron supply to the system for the formation of hæmoglobin; the amount of nucleo-albumin as ordinarily contained in a well-regulated mixed diet is far in excess of the requirements of the system daily. If, now, for any reason, the nucleo-albumin is decomposed in its passage through the alimentary canal before it is absorbed, then the system is deprived of the regular supply of this hæmoglobin-forming compound, and the condition known as anæmia will, of necessity, supervene. On the other hand, if there is a too rapid escape of the hæmoglobin from the body, as occurs in connection with hæmorrhage, the loss of hæmoglobin will be more rapid than the reproduction of it by the physiologic laws already outlined.

Lack of iron in the system, or anæmia, may then be classed as a surgical condition, etiologically considered, when the loss of hæmoglobin is directly traceable to a hæmorrhage. On the other hand, the loss of iron, or anæmia, is a medical condition when it results from any one of the three following conditions: First, when too little food is digested, or that which is taken is deficient in the nucleo-albumin compounds. Second, when there is introduced into the alimentary canal with the foodstuffs sulphur-compounds, or when digestive disturbances exist which cause the formation within the alimentary canal of an unduly large amount of these sulphur compounds. In either instance these latter, having an intense chemical affinity for the iron atom that is loosely combined in the nucleo-albumin, draw the iron out of this compound and form an insoluble and unabsorbable sulphide of iron, thus depriving the system of its natural hæmoglobin-forming substance. (In either instance the natural supply of nucleo-albumin, out of which hæmoglobin can be formed, is destroyed or prevented from gaining access to the circulation and hepatic cells.) Third, that condition in which there is not necessarily any diminution in the foodstuffs, either as regards quantity or quality, or any excess of sulphur compounds in the alimentary canal to destroy the nucleo-albumin contained in the food supply; but there is a disturbance in the chemico-physiologic activity of the system, so that none of the foodstuffs, and particularly the nucleo-albumin, can be oxidized and utilized properly by the animal economy. This condition is found in all the infectious diseases, and when microbic and toxic agents are introduced into the system. It occurs in all acute and chronic diseases of the circulatory and pulmonary system, and in hepatic and renal affections. This condition is also encountered in the uric-acid and oxalic-acid conditions, in neurasthenia, rheumatism, diabetes, pernicious anemia, etc.

Prof. Porter next proceeds to demonstrate that in cases of anæmia due to insufficient digestion of foodstuffs, a proper regulation of diet and the giving of remedies that will help the enfeebled digestion is all that is needed. To give salts of iron in such cases, when there is no destruction of the iron by sulphur compounds, would be useless or even damaging.

In the second class the matter is different. It is at this point that the true explanation for the action and utility of the iron salts is discovered. So far as the possibility of the absorption of iron is concerned, it does not make any difference which one of the salts is introduced into the stomach, as none of them is absorbed. If they act at all it is by their being acted upon in the stomach by the hydrochloric acid, and there converted into a chloride of iron. This is true alike of all the inorganic and the many so-called organic preparations, excepting, possibly, a part of the nucleo-albumin, which then follows the same course as that of the foodstuffs.

He next points out that the non-absorbability of iron by the intestinal tract appears to be a wise provision of nature for the keeping of toxic compounds out of the system. Ferric oxide, in combination with the organic acids, behaves in the same manner as the inorganic salts of iron. The albuminates of iron, so-called, which, however, do not seem to be true chemical compounds, but simply variable and loose mechanical mixtures of iron and some proteid substance, are probably split up in the stomach by the gastric juice, with the formation of a chloride and a proteid body. Even if this is not the case, there is no evidence to show that they resemble the polymeric nucleo-albumin, or that they can be utilized by the system in a similar manner.

Thus we find that one by one all the vaunted preparations of iron fall into the same class, so far as their utilization by the physiologic economy is concerned. The iron in them all, be it an inorganic or a so-called organic compound, follows the same course in its passage through the alimentary canal, unless we are dealing with the nucleo-albumin as constructed by nature; and even a part of the iron in this compound must be converted into a chloride by the action of the hydrochloric acid of the gastric juice before it can be utilized.

After the iron-bearing compound has been converted into a chloride, owing to the strong affinity existing between the iron and the sulphur, the iron is quickly attacked by the sulphur compounds with the formation of an insoluble sulphide of iron (FeS). With this explanation, the iron administered to the patient, instead of entering into the blood, in some mysterious and inexplicable manner and in defiance of all the well-established chemical laws, now obeys the accurate laws of chemistry and appears in the feces in the same quantity in which it was administered, but as a black sulphide of iron—hence the black stools following the exhibition of any and all preparations of iron that are of any value as therapeutic agents.

This quick satisfaction of the sulphur compounds by the action of the active chloride of iron prevents the destruction of the iron-bearing compounds—nucleo-albumin—contained in the foodstuffs. The nucleo-albumin now passes on as usual in its natural course to reach the enterohepatic blood-stream, from whence it is drawn into the protoplasm of the liver-cells together with active oxygen and is there oxidixed or reduced to simpler compounds, such as hemoglobin, lecithin, water, and carbon dioxide, etc.

The author concludes that all available inorganic iron is converted into the chloride by the hydrochloric acid of the gastric juice, and that as chloride the iron is acted upon by the sulphur compounds in the intestines, to be excreted as iron sulphide. The only advantage the Blaud pill has over the chloride lies in the fact that the stomach tolerates it better and that by slow conversion it can produce its results without irritation. He advises the compensating of the system for its loss of hydrochloric acid in this change by the giving of that acid to the patient when taking Blaud's pills.

If the reader will refer to page 369 of the August number of the *Archives* he will find a reply to F. G., a California correspondent, on this very question, following exactly the line of thought expressed by Prof. Porter, as follows: "When inorganic iron is administered to anemic patients in the form of Blaud's pills, or of the tincture of iron chloride, it is quite possible that the great benefit that the patient obtains may be due to the effect of the iron on the successive steps of intestinal digestion, and not to the iron being absorbed into the blood. By uniting with the hydrogen sulphide it may save the organic iron of the food from being rendered unfit for assimilation, or in this way it may save the body from being injured by the hydrogen sulphide in any other manner." We are pleased to have Prof. Porter confirm this tentative attempt as a possible explanation in so able and comprehensive a manner.—*Merck's Archives.*

THE THYROID GLAND AND THE MENOPAUSE.

By CHAUNCY R. BURR, M.D. (Harv.) Ph.B. (Yale),
Assistant Surgeon, United States Navy, Puget Sound Naval Station.

The following case recently came under the writer's observation. A lady, fifty-six years of age, was said to have had an apoplectic stroke in London, in December, 1898. The catemenia ceased in August, 1897, since which date and up to the advent of the apoplexy various nervous symptoms had been complained of. There were flushings, neuralgias, hysterical attacks, an anesthetic area in the left ulnar nerve—more pronounced at some times than others—a red face, a full and strained look about the eyes. The pulse during this time was always quick, sometimes rapid. The body weight just before the menopause was 185 pounds; a few weeks before the apoplectic stroke it was 177 pounds; nine months after it was 146 pounds. There were also digestive disturbances, constipation, anorexia and "bilious attacks." The heart, lungs, kidneys and uterus were normal.

The apoplexy occurred of an evening. The patient was sitting quietly in her apartment in a London hotel, at peace with herself and the world, when of a sudden she found herself unable to speak. Her lips moved, but no articulate speech followed. There was no headache and no mental confusion, and no loss of power save in the muscles of speech. She was got to bed and a physician called. In the morning there was a hemiplegia of the right side. The restoration of function was comparatively rapid and progressive. She first regained control of her right leg, then the right arm, and lastly her powers of speech.

Nine months after this attack, namely, in September, 1899, she again came under my care. What struck me particularly in her appearance was the flushed face, injected eye and general tremulousness. The speech was thick and she was obliged to speak slowly in order to enunciate distinctly. There was a twitching about the right corner of the mouth. The tongue was protruded slightly to the right and the labionasal fold on that side was partially obliterated. She perspired readily, had flushings as of old, and, I was told, had cataracts developing in both eyes. The pulse was full and bounding, though no fever was present, and averaged from 100 to 120 beats per minute. She was markedly emotional and wept frequently during the interview. I observed that she seemed intolerant of any pressure about the neck and frequently attempted to loosen her collar. The grip of the right hand seemed very nearly equal to that of the left and the limp in her gait was almost imperceptible. There was still an anesthetic area over the distribution of the left ulnar nerve, but the sensation in the left hand she declared to be different from that in the right. The latter was numb, but the former felt as if the skin had been soaked in ammonia water.

Physical examination revealed but little. The heart, lungs and kidneys were still negative. Both eyes were somewhat prominent and the lower lids sacculated. There was an abnormal fullness over both lobes of the thyroid gland, and an abnormal tenderness over the external occipital protuberance and the spinous process of the seventh cervical vertebra.

Her principal complaint was of headache, chiefly occipital, and her difficulty in enunciation; also of a rigidity in the posterior muscles of the neck. The headache was worst in the early morning, namely, at about five o'clock, and prevented her from sleeping, though she could not say with certainty that it was the headache which awoke her at that hour. There were also a few minor ills, such as pruritus about the external orifices of the ears and nose, an excess of mucus in the throat, pains in the right shoulder and beneath the right shoulder-blade, and, finally, constipation.

The fullness of the thyroid gland, the prominent eyes, the flushed face and rapid pulse, as well as the progressive loss of flesh, led me to believe that I had a case of exophthalmic goitre to deal with. Moreover, I knew she was also hysterical, and, as such, hyperesthetic to the action of drugs. I prescribed, therefore, two minims of the tincture of belladonna, morning, noon and night.

I did not see her for a week, but when I did was astonished at her condition. The face-flush had gone; the eyes were no longer prominent; the tremor and twitching about the mouth had disappeared; the speech was slow, but not as thick as before; the tongue was protruded nearly in the median line; the pulse was normal. She still complained of occipital headache, and winced when the spinous process of the seventh cervical vertebra was touched. The belladonna was continued for another week, when she assured me the sense of oppression about the neck had disappeared, and also the pruritus about the nasal and aural orifices. This pruritis was a subjective symptom, as examination of the ears and nose showed nothing to account for it. The thyroid gland could scarcely be palpated. She was rational and composed, and had had no return of her hysterical attacks since the date of the first examination.

The association of an ulnar anesthesia on the left side, with an area of sensitiveness over the seventh cervical vertebra pointed to a lesion at this latter point, either in the bone itself, the cervical portion of the spinal cord, or its meninges. Moreover, this anesthesia antedated the apoplexy by two years. It appeared for the first time soon after the menopause. It was constant and not progressive. There was no redness or heat in the neighborhood of the cervical vertebræ. A bone lesion seemed inadmissible, and the possibility of a cordal or meningeal inflammation at this point was entertained.

To the writer the case was very instructive, and opened up the question whether an over-active thyroid is not in many cases responsible for the nervous phenomena of the climacteric.

That there is some connection between the thyroid gland and the generative organs of both sexes is well known. Thus the thyroid is congested by hyperemic during menstruation, coition, pregnancy, accouchement. Whether this hyperemia results in an increased production of the thyroidal secretion does not appear to have been definitely determined. It does exist in the pathological congestion of the gland observed in infectious diseases, according to Roger and Garnier,[1] and also in exophthalmic goitre, according to Murray.[2] There seems no good reason, therefore, to deny an increase in physiological congestions as well.

The thyroidal congestion of menstruation is relieved upon the appearance of the uterine flow. Young women often complain at such times of a feeling of oppression about the neck, which leads them to seek relief in a tight neck band. Where no flow appears, as at the menopause, this congestion may readily take on a pathological condition owing to long continuance. In such a case, as in exophthalmic goitre, auto-intoxication may be expected. It is scarcely necessary to observe that there are various degrees of auto-intoxication, just as there are various degrees of exophthalmic goitre; but whether in the first degree or in the third degree, there is a marked similarity between the secondary symptoms of thyroidal intoxication and those of the menopause. Thus headaches, neuralgias, paresthesias, flushings, tremors and hysteria are common to both states.

In the case reported the exophthalmic goitre was, in the writer's opinion, the direct result of the long-continued congestion of the thyroid consequent upon the menopause. How far the paresthesia in the distribution of the left ulnar nerve, the hysteria, cataracts and cerebral hemorrhage were due to the exophthalmic goitre now remains to be considered.

---

[1] *La Press Méd.*, April 19, 1899.

[2] *Medical News*, April 15, 1896.

Herter mentions[3] a very rare form of pachymeningitis localized in the cervical region, to wit, hypertrophic cervical pachymeningitis. It occurs in late middle life. The earliest symptoms of the disease are due to the irritation of the nerve roots, pains between the shoulders, in the back of the neck and head, slight rigidity of the muscles of the back of the neck, tenderness of the cervical vertebræ to percussion, slight disturbances of sensibility, paresthesias, and more or less symmetrical neuralgic pains, especially in the distribution of the ulnar and median nerves. This definition is sufficiently accurate to fit the case under discussion.

As to the pathology, it appears probable that the disease begins in the pia arachnoid of the cervical region as a small round-cell infiltration associated with arteritis, and arteritis of the spinal cord is thought to be due to the action of irritants in the blood, and particularly to toxins. Why this particular section of the cord should be affected is not clear, but of the clinical fact that toxins in general irritate specifically the spinal cord and the medulla oblongata in particular, and, if intense enough in their action, give rise to a condition of hemoglobinemia, there can be no manner of doubt. The symptomatology common to all infectious diseases proves this. Abbott says:[4] There is as yet (1899) little agreement of opinion as to the chemical nature of toxins; but it is probable that the group comprises different bodies of the nature of globulins, nucleo-albumins, peptones, albumoses, and enzymes, or ferments. Ostwald has recently announced[5] that the iodine proteid of the thyroid gland belongs to the class of globulins; that it contains from 1.5 to 1.75 per cent. of iodine and about 2 per cent. of sulphur, but no phosphorus. Durdufi has isolated from the normal thyroid a substance analogous to cocaine, that is, an alkaloid, so that the toxicity of the thyroid juice seems to be well vouched for. An excess of thyreoglobulin in the circulation is supposed by many to be the exciting cause of exophthalmic goitre, and if globulins are toxic it may well be that the thyreoglobulin was in this case the specific cause of the cervical pachymeningitis and hence of the paresthesia in the distribution of the left ulnar nerve, particularly as the symptom appeared for the first time and soon after the menopause.

As to the dependence of some cases of hysteria on thyreoglobulin poisoning, I can only suggest that such dependence is extremely probable. In the case reported no hysterical symptoms persisted after the subsidence of the thyroidal swelling.

The eyes were examined by a well-known San Francisco oculist, who pronounced the dimness of vision due to double cataracts, still in their incipiency. This dimness of vision was also a post-climacteric symptom, and was doubtless due to the exophthalmos. The intra-ocular pressure was increased, just as in glaucoma, and the lymph circulation of the lens interfered with. It is customary to refer conjunctivitis, conical opacities and the like, which may occur in the course of exophthalmic goitre, to imperfect closure of the lids and to the consequent irritation of substances introduced from without. While not belittling this source of irritation, I would also suggest that intra-ocular pressure has often quite as much to do with the production of such lesions as the actual introduction of irritants. Gerrish [6] has well said, "that anything which arrests the current dams back the lymph upon the region which the vessel normally drains, unless the fluid can escape by some side channel, and this interference results usually in one or both of two principal changes. The first of these is dilatation of the vessels from the increased pressure of lymph within, and the other is saturation of the tissues on the distal side of the obstruction with lymph, and their consequent hyperplasia from over-nutrition." The deposition of lymph between the lamellæ of the cornea is a prerequisite for the production of an opacity in this structure, and it may well be that the same thing holds for an opacity in the lens.

---

[3] *American System of Practical Medicine*, vol. iv., p. 111.

[4] *Principles of Bacteriology*, p. 404.

[5] *Zeitschrift für physiologische Chemie*, vol. xxvii, 1899.

Whether a cerebral hemorrhage really occurred in this case is not for me to say. The symptoms of a cerebral hemorrhage—at least some of them—were undoubtedly present. In both hysteria and exophthalmic goitre, however, the same symptoms may also occur. In the paralyses of exophthalmic goitre, Joffroy places in the order of frequency, ophthalmoplegia first, then paralysis of the facial muscles, the jaw, tongue and velum palati. In hysterical hemiplegia, according to Sinkler,[7] the face is never paralyzed. The patellar reflex, which is commonly diminished or absent in exophthalmic goitre, was increased in this case, and if anything, more so on the left than on the right side.

In hysteria the patellar reflex is increased in a large proportion of cases. Although hysteria and hemiplegia were both present in this case, the existence of the facial paralysis and that of the tongue and velum palati (for to nothing else can I attribute the peculiar thickness of speech) would seem to argue against the hysteria as the cause of the hemiplegia. The choice lies betweeen a hemiplegia of exophthalmic goitre origin and a cerebral hemorrhage. The suspicious improvement in the movements of the facial muscles, tongue and speech after a two weeks' course of belladonna inclines the writer to the opinion that the cerebral hemorrhage, if it ever existed, must have been extremely small in amount. A series of fly blisters on the nape of the neck greatly relieved the symptoms of irritation at this point.—*Boston Med. and Surg. Jour.*

EARLY *v.* LATE OPERATION IN CASES OF INFLAMED APPENDIX.

By C. MANSELL MOULLIN, M.D., Oxon., F.R.C.S. Eng.,
Surgeon and Lecturer on Surgery at the London Hospital.

It is now a little more than ten years since Sands, operating within forty-eight hours of the beginning of the attack, performed the first successful laparotomy for peritonitis consequent upon perforation of the appendix. It is just ten years since the first series of early operations was reported by McBurney, seven out of eight patients recovering. Since that time, more especially since McBurney's paper containing a report of twenty-four early operations, twenty-three of which recovered, was read before the New York Medical Society in 1891, it has become recognized that in a large proportion of these cases operation is the only treatment possible. The general principle is admitted everywhere; but with regard to details—whether the patient should be operated upon during the first attack or soon after it, or whether he should be allowed to run the risk of a second and even of a third attack, and especially as regards the time when the operation should be performed—there is great divergence of opinion.

---

[6] *Treatise on Surgery*, Park, vol. i, p. 520.

[7] *System of Practical Medicine*, Loomis, vol. iv, p 699.

In America it is generally held that laparotomy is advisable as soon as the diagnosis of progressive inflammation of the appendix is certain. Even if the progressive character of the attack is doubtful it is better to 'err on the side of safety. Any case, whether in its first attack or not, which shows definite signs of increasing disease thirty-six hours after the beginning, should be operated upon without further delay. In Germany Carl Beck and others who have written recently upon this subject hold the same view. It is better to operate too early than too late, according to Strümpell. But in England neither early operation nor operation during or after the first attack is in favor. Unless the symptoms are so imperative that delay is out of the question it is better to wait at least until the fifth day. Both of these views cannot be correct, the difference between them is far too great. If it is right to wait until the fifth day in all but absolutely imperative cases, it is wrong to make a rule of operating at the end of thirty-six hours. One or other, or perhaps both, must be modified.

It is worthy of note that the two recognized authorities on the pathology of this question, Hawkins and Kelynack, do not speak by any means strongly in favor of delay, but rather the reverse. Hawkins concludes that if all his relapsing cases (59 out of 264) had been operated upon during or immediately after the first attack, seven lives would have been saved and fifty-two other individuals would have been spared a more or less severe illness, provided, of course, that these fifty-nine early laparotomies had terminated favorably. "If the mortality of the operations is so small that it may be neglected, and if I am wrong in doubting its efficacy in preventing fatal peritonitis, it must then be admitted that excision in the first two days of illness is the true and rational plan of treatment." And Kelynack, after mentioning cases in which diffused peritonitis or local suppuration is present, advocates operation also in rapidly progressing cases, quickly leading to gangrene, "in order to forestall the perforation."

Statistics, it is sometimes said, never prove anything, or prove everything equally well; but this at least must be admitted, that the evidence they give, for what it is worth, is decidedly in favor of early operation.

The general mortality among cases sufficiently severe to be admitted into hospital is estimated at from 14 per cent. (Hawkins) to 20 per cent., and even higher. (In private practice and in the services where every case, no matter how mild it may be, is reckoned, the percentage is a good deal lower.) Of these cases a certain proportion begin acutely and show signs of improvement before thirty-six hours have passed. No one, so far as I am aware, proposes to operate upon these, at any rate during their first attack. The inflammation is not progressive. They must therefore be excluded in an inquiry of this kind, and this, by diminishing the total without affecting the number of cases in which suppuration or peritonitis occurs makes the proportion more unfavorable. Can it be imagined that if all these cases (with the exclusion of those which began to improve within the specified time) had been operated upon at the end of thirty-six hours (I do not say this would have been possible; unfortunately in hospital practice it is not, for only too many of the patients do not apply for relief in time)--can it be imagined that the mortality would have been as high as 14 per cent.? Would it not have been more nearly 5 per cent., or even 2 per cent.?

This is met at once by the answer that it is unjustifiable to perform such a number of unnecessary operations. This would finish the matter at once if it were proved that the operations were unnecessary; but it is not. It is merely assumed. It is easy to be wise after the event and to point out after the patient has recovered that an operation was unnecessary. But this is not the point. This question has to be settled in each individual case at the beginning of the attack, when the future course of the disease is quite unknown and it is impossible to tell what may happen. It is admitted by all that, with the exception of the most severe cases, no one can predict what result may follow when the appendix is inflamed. Suppurative peritonitis may break out suddenly even in the mildest cases. The question, therefore, whether operation is unnecessary or not must be answered at a time when the result of the disease cannot be foretold. The answer at that time is hardly likely to be so positive. It may be wise to allow the patient to run the chance of recovering without an operation; but the opposite opinion is at least admissible. It is certain that cases occur in which the fact that operation has been postponed is a source of the deepest regret. For some time past I have advocated operation at the earliest possible opportunity in all those cases which have not shown definite signs of improvement within thirty-six hours and I have not yet met with one of which the contrary statement could be made. On the other hand, I have been sufficiently fortunate to find gangrene of the appendix before general peritonitis had set in, and to have saved the patient from this almost inevitably fatal complication. Mynter, of New York, has published notes of thirteen such cases, all of which were saved by operation, out of fifty-two, so that they are not uncommon.

The first essential is to form an estimate of the number of patients who make a permanent and complete recovery without operation. Of course, no case which relapses, or in which a hard and tender mass persists in the iliac fossa, or in which there is a sense of uneasiness in that region after exercise, can be counted. I know, for instance, a patient who nearly fifty years ago suffered from a severe attack, and who has never had a second, but he has not recovered. There is still a mass to be felt in his iliac fossa. By dint of the utmost care as regards diet, the condition of the bowels, and exercise, the danger has been escaped so far, but this has only been possible because of the exceedingly favorable circumstances in which the patient is living, and because he is both willing and able to take the most minute precautions. Recovery, when it is wished to institute a comparison between cases which are operated upon and those which are not, must be complete and permanent.

The number of cases which relapse is very large, as every one will admit. The estimates given by different observers vary from 30 per cent. to 60 per cent. As it is not possible to keep patients under observation sufficiently long to prove that they will never have another attack, an estimate of this kind can only be formed by inquiring when a patient presents himself whether he remembers ever having suffered in a similar manner before. It is manifest that there are numberless sources of fallacy, and this probably accounts for the very great discrepancy in the results. If all the slighter cases and those which definitely improve within thirty-six hours (which are naturally the least likely to suffer from relapses) are left out and only the graver ones (in which alone does the question of advisability of operation arise) are taken into consideration, there can be little doubt that the proportion of relapses would be very much nearer the higher figure than the lower. Suppose for an instant that it is only 50 per cent., the case then stands thus: Taking one hundred cases, such as are usually admitted into hospital, twenty-eight (Hawkins) will suffer from local suppuration or diffuse peritonitis and be operated upon. Of the remaining seventy-two cases, thirty-six patients, or more than one-third of the whole, will suffer from one or more relapses, in each of which they will incur the same risk again, and each of which will lay them in bed for an average period of twenty-five days. It seems to me to require some hardihood to assure a patient at the beginning of an illness of which the course and termination are entirely uninfluenced by medical treatment that an operation is unnecessary when, even if he gets off with his life, the chances of his making a perfect recovery without operation are little better than one in three.

One or two other points are worthy of attention in connection with this question. The cases which recover are often spoken of as "non-suppurative." This is pure assumption and quite unjustified. Suppuration occurs in a very much larger proportion of cases of inflamed appendix than is usually believed. In many of these the abscess bursts suddenly into the bowel, with instantaneous remission of all the symptoms; in others the pus gradually becomes inspissated and dried up. Many times in operating upon chronic recurring cases I have been astonished at finding a latent collection of pus which, so far as I could ascertain, had not given rise to any of the ordinary symptoms of suppuration during the course of its formation. It is true that many of these cases recover without operation, but it is not good surgery to leave an abscess in close proximity to the general peritoneal cavity in the hope that it will not burst into it.

And another argument in favor of early operation is the very grave effect upon mortality which the postponement of the operation exerts in the case of those who, because of suppuration or of diffuse peritonitis, come to operation at last. In nothing is the disastrous effect of delay more clearly shown. Nor is this merely a general impression. Fowler,[1] analyzing 127 cases, showed that 83 per cent. recovered of those patients who were operated upon in the first three days; 60 per cent. of those operated upon on the fourth day; 58 per cent. of those operated upon on the fifth and sixth days; 50 per cent. of those operated upon on the seventh and eighth days; and only 33 per cent. of those operated upon on the ninth and tenth days. As Murphy has phrased it, one-half of all the patients who would have recovered by operation will die if we wait until the sixth day.

---

[1] Annals of Surgery, May, 1894.

If in a case of inflamed appendix thirty-six hours have passed without definite improvement having shown itself the responsibility for the consequences must, it seems to me, rest with those who recommend that an operation should not be performed.—*The Lancet.*

Wimpole street, W.

DYSMENORRHOEA.

By ANNA E. PARK, M.D., New York.

Trite as the subject of dysmenorrhœa may be regarded by the very learned gynæcologist, it is a matter of too deep interest to sufferers to be passed over with a flippant mentioning. It denotes the perversion of a function, or its imperfect action, which to a woman is intimately associated with the entire physical nature. Whatever, therefore, throws light upon the affection, its causes and their removal is a boon of inestimable value. And even though it be but the shining of an humble taper, it is worthy of consideration.

The disorder is one that comes frequently to the knowledge of the physician who has any extensive practice among women. The young girl is as liable to its visitation as the more mature woman. Our responsibility, therefore, to those who employ us as medical advisers to the family is very great. Plainly it becomes our duty in that home to win the confidence of its younger members as well as that of the parents. By that means alone are we able to guard the health of the children, male and female; aye, and oftentimes their honor.

The complaint of which we are treating appears to have been far more prevalent of latter years than formerly. This fact suggests a fault existing somewhere in the training of young girls. I am sorry to be compelled to name as one cause of the evil the diversion of skating. I admit that the spectacle of a number of skaters, youths and maidens, gliding on the ice, cutting figures of different forms and sizes with an imaginable grace, is a very pretty one. But when we count the cost to these girls when they attain the age of puberty, our admiration becomes changed to serious misgiving. The violence of the exercise, accompanied, as it often is, by sudden and dangerous falls, as well as by sudden checkings of perspirations, involves deadly peril to those girls' lives. Such adventures, likewise, as the long and rapid walking, the climbing of mountains, dancing till overheated and then cooling off by an open window or in a draft, are all full of mortal danger. Even if the terrible congestions, pneumonias or rheumatic seizures are escaped, the beginning is made for a long recurring of miseries.

Yet if our girls of tender years or thereabouts should be properly cautioned and otherwise prepared for the catamenial term, I am of the opinion that we would have occasion, in very few instances only, to treat dysmenorrhœa. Nevertheless, here we find difficulties that often seem insuperable. Mothers shirk their duty and utterly disregard the future health and physical well-being of their daughters. Some err in this way through ignorance; but others have a mistaken notion of delicacy, and refrain from telling what ought to be known. The maternal vigilance which would warn them of the approaching crisis of womanhood is withheld from the daughters.

One family had been under my own professional care, and I had diligently enforced upon the mother her duty to prepare her daughter for the event about to transform her young life into adolescense. She was at a loss how to begin. Presently she resorted to the expedient of asking the child to help her hem some napkins. The young girl quickly noticed that these articles were different from those in general use, and asked her mother about them. The mother simply replied: "When I was of your age I assisted my own mother in this same kind of work; they were for me, and these are for you, as you will soon need them."

The child understood her meaning and quietly thanked her. No more was said upon the subject till a few weeks later, when the occasion came. The daughter hastened to her mother at once for counsel and direction. Thus was confidence exemplified, and where was the indelicacy? Would it not have been flagrantly indelicate to leave the child ignorant till the change should come, or to suffer her to learn of the matter from the prurient revelations of school-girls or playmates? We all of us know that imprudence at this period is full of deadly peril to the young woman. As physicians having our patrons' best interests in charge, we have no right to permit their children to remain in such ignorance; when at this critical period of life these require more than usual care and watchfulness. If parents will be thus remiss, then the physician, by virtue of professional obligation, should assume the duty of giving such children the needed information.

Young women have come to me for professional treatment and given me their confidence. They told me of the alarm and trepidation at the occurring of the catamenia. They were ashamed to go into the presence of their mother or father, from apprehension that they would be suspected of wrong-doing. They had an undefined dread of evil, baseless, to be sure, but none the less, full of terror. To hide their situation they had bathed in water icy-cold. The blame for all this, for the alarm and terrible fear, who can doubt that it belonged to their mother, or, perhaps, their physician who had not instructed them? They were, of course, suffering from dysmenorrhœa; some of them more than did their mothers in giving them birth.

In this way, unfortunately, the demands of "society" upon young women are so many and exacting that they have little time or even disposition to give heed to the ordinary requirements of nature, upon the attention to which health absolutely depends. Let there be a ball, a reception or theatrical entertainment to take place at the same time as the catamenial period and one or the other must give way, without a thought of perilous results, the unwary girl will plunge her feet into cold water, arresting the natural process and bringing her life into imminent danger. For this ignorance which admits of such recklessness who is to blame? This question is for the members of the medical profession, as well as for parents.

We are told that our American women are very beautiful, very graceful, as a rule, but as frail physically as beautiful. They cannot endure fatigue as their English, French, Irish or German sisters are able. These, it is said, are brought up to "rough" it; nevertheless, for all that, I believe that these sisters of foreign lands, during these periods, are required to remain comparatively quiet. Physicians in this country are apt to hold themselves aloof from the younger members of a family. This should be otherwise. The children of a household in their turn regard the physician as a kind of ogre, and his appearance as a precursor to a period of dosing with repulsive medicine, with its dreaded disagreeable consequences. They can and should be encouraged to welcome his coming. They are ready to give their love and confidence where it is invited, not repelled. When they esteem and trust the doctor they are seldom unwilling to swallow the pill or potion which he prescribes. When they are thus won the influence will last for the lifetime.

We repeat, as we return to our subject, that violent exertion of all kinds must be peremptorily forbidden at the catamenial period. In order that the impression may not be conveyed that this is only a cranky notion, it will be sufficient to give the reason and leave the rest to individual judgment and discretion. An intelligent, well-meaning girl will not be hard to convince or averse to obey. Cold should be carefully avoided. To woman surely the maxim is true, that heat is life and cold is death. Besides this, girls should be kept as quiet as consistent with the imperative requirements of their position in life. We are well aware that many in the shops and stores are compelled to stand behind a counter all day, every day in the week, with no opportunity of rest except on Sunday. All such should be advised to wear a flannel bandage over the abdomen, secured with the large "bank pins." It should be drawn as tightly as possible below the umbilical region and loose above. To this the strap-garters should be attached, thus holding it in place. In case of a profuse discharge the individual should wear a napkin, but otherwise this should not be done, as its tendency is to check the flow and increase the suffering.

Some years ago Mrs. J. was brought to me for examination. She was a second wife and had been married seven years, but had no children. With every period she suffered intense pain, long continued, and opiates were employed for her relief, both by the mouth and hypodermically. At last two eminent physicians advised ovariotomy. One of her step-daughters, however, had been under my care for dyspepsia, and was able to persuade her to consult me before undergoing the operation. She came with her husband, and I assured them that if my treatment should be of benefit there would be a marked change at the very next period. They resolved to give me a trial. To our delight on both sides, there was no need of opiates at that time. There was severe pain at times, but it was promptly relieved by heating an earthen plate and applying it over the ovarian region. The material evacuated was copious in quantity, dark-colored and offensive. I employed electricity daily and administered the following prescription:

℞ Tincture of gum guaiacum, ʒ iij. ; tincture of sanguinaria, ʒ ss; syrup of iodide of iron, ℥ ss. Mix and give a teaspoonful in water four times a day.

The second month there was no pain or warning of the coming of the period. She now discontinued the use of the medicine, but received the electric treatment. The third month there was no discharge, but a distressing nausea and a peculiar dislike for certain articles of food. I prescribed a diet of fruit, and attended her nine months later, when she was delivered of a healthy boy. From that time ovariotomy was at a discount in that family.

Another patient was a young English woman. She had married in England and came to America with her husband and sister to make their home. They took rooms at a fashionable house till they had become somewhat acclimated. The young wife, not feeling well, some of the other boarders recommended her to apply to a fashionable physician in Brooklyn. She underwent a fearful experience lasting over seven months. It was then declared that an operation was necessary; and the husband wrote to her mother to come over and be present. In the meantime she consulted me. I found her far advanced in pregnancy, and the fœtus not only dead but very much decayed. I told her sister who had accompanied her that I wished to see the husband. When he came I informed him of her condition and that no power on earth could save her life. I injected brewers' yeast and administered it internally. She died before her mother had arrived from England. The physician who had been in attendance disputed my diagnosis, and I insisted upon a necropsy. There was a fœtus there of eight months, a loathsome mass of decay. The doctor was very anxious to avoid public exposure; but if I had been guilty of a like offence I doubt very much whether I would have escaped the State prison, and I could not have questioned the justice of the penalty.

Not long since an unmarried lady came to me. She had suffered intensely at every menstrual period. She was thirty-eight years old, but looked much older, haggard and care-worn. The period recurred every third week, and her life had become a burden almost too great to sustain, and she was at times strongly tempted to put an end to it. So far, her moral and religious convictions had enabled her to endure the fearful torture, but she had become afraid that the temptation would exceed her strength to resist. She had been told that only an operation could give her relief. Finding that she suffered from habitual constipation, I administered to her a mixture consisting of tincture of rhubarb, ℥iij, and mandrake, ℥j; a teaspoonful in hot water at bedtime. This obviated that difficulty. I also made the following prescription:

℞. Tincture of gum guaiacum, ʒij; tincture of Sanguinaria, ℥j; syrup of iodide of iron, ℥iij; oil of black pepper, m.x. Mix and give a teaspoonful in cold water every four hours.

She is now progressing favorably. The pain at her last period was not sufficiently severe as to compel her to remain in bed, as heretofore. Her family are delighted at the improvement. She is cheerful and takes part with them in the social pleasures; her complexion was mottled, but is now of a clear white and red, with no excuse or occasion for a cosmetic. Her society, now that she takes delight in living, is much courted. She would hardly consent now to undergo ovariotomy.

Very often dysmenorrhœa is accompanied by a contraction of the os and cervix uteri. In such cases I find sea-tangle tents very serviceable. They should be removed and renewed daily until the parts are properly dilated. After this the proper uterine tonics should be administered, a tablespoonful four times a day for three months or longer.

Some days ago I was asked by a patient why the male physicians are so eager to deprive a woman of her ovaries. I can give no good valid reason. Surgeons, especially gynæcological ones, seem to have an insane passion for bloody operations; and resort to them sometimes when they are wholly without extenuation or excuse. They are mad to count ovariotomies by the hundred and thousand, murderous and criminal as such a record is. Women have generally been helpless in their hands. They are laughed to scorn when they protest against the savage act. A woman seldom voluntarily consents to be deprived of her ability for motherhood. She mav not love her husband, but she instinctively desires children and feels ashamed of barrenness. If we were to revenge this surgical cruelty by an analogous operation perforce upon men, the very welkin would resound with anathemas and execrations for our inexcusable barbarity, yet it would be fully as justifiable.

From the cases which I have cited, to which many more can be added by myself and other physicians, I am able to affirm without fear of truthful contradiction, that women in very many instances are subjected to this cruelest indignity when there is not the slightest necessity. It is certainly a duty to exercise more caution before venturing upon this operation which makes woman a nonentity. There are other causes for painful menstruation than ovarian tumor, and it is the unequivocal duty of the physician to exhaust every other method of remedy before resorting to the deprivation of the maternal organism. What the unsexing process makes of man, base and disgusting eunuchs, ovariotomy accomplishes with woman. In the name of my sex, sustained by others of my profession, themselves women and true men, I call for a halt in this matter. I will not allude to the numerous fatal operations in the gynæcological slaughter-houses, legions though they be, but plead for the physical integrity of the unfortunate ones of my sex. Be just to us in this matter, if you are not generous. Have some mercy upon woman in her sufferings and perils. See to it that the children are duly instructed so that the painful disorders which afflict women may be averted, and though your fame as accomplished surgeons may not be so brilliant your merit and reputation as physicians will stand on a firmer foundation.—*The Chicago Medical Times.*

THE ORIGIN OF SEX.

The literature of the problem of sex production is increased by some Notes on the Origin of Sex published in the *Intercolonial Medical Journal of Australasia* for October 20th. The author, Dr. Arthur Frederick Davenport, at least gives evidence enough of his capacity to justify attention being drawn to his views; for his obstetrical experience seems to have been considerable, the period over which his researches have extended amounts to sixteen years, his investigations have been supported by experiment, and he appears, moreover, to have thoroughly acquainted himself with what had already been done by others in the subject, thus obviating a not uncommon cause of failure among aspiring original investigators.

The upshot of Dr. Davenport's investigations is what is known as the "cross heredity of sex"—viz., that "the sex of the child is determined at the moment of conception, and is the opposite to" (that of) "whichever parent is at that moment in relatively the more vigorous health."

Dr. Davenport shows how he arrived at this conclusion, how he subsequently verified it experimentally, and finally how it harmonizes with all that appears probable in each of the conflicting theories of other investigators.

It is a pretty generally acknowledged fact that "the ratio of male to female children at birth varies so slightly in different countries and among different races as to almost constitute a law." The ratio for Europe is placed at about a hundred and six males for a hundred females.

Upon this the author says: "In striking contrast to this average, preserved regardless of environment throughout the human race as a whole, stands out the disproportion between the sexes often observable in individual families," the cause of which disproportion must exist in the parents.

During twelve months' residence in the Rotunda Hospital, Dublin, in 1883, the author began his observations among the poorer Irish families in the slums, who, as he says, "marry young, are rarely sterile, and in the matter of procreating their species take no thought for the morrow." In the majority of such families he found the greatest disparity between the sexes of the children, amounting in some instances to whole families of ten or more of one sex. Yet, out of between four and five hundred families observed, a total of 2,540 children gave males 1,313, females 1,227—a fairly balanced ratio singularly near the estimated 106 to 100.

Thus came to him the question, "Why had A. B., aged thirty, cab driver, with a wife aged twenty-seven, a family of one girl and six boys, while his neighbor, C. D., aged thirty-three, laborer, with a wife aged twenty-nine, had a family of seven girls?" The continual repetition of this problem led him to the observation that "the family which contained an undue majority of male children possessed also a mother proportionately more vigorous and in better health than her husband, while in the family with an undue majority of female children the father was proportionately superior in vigor and health to his weakly wife. In many families this rule was exceedingly striking; in others, where the sexes were more evenly matched, so also were the parents." The author defines the term health in this connection as "meaning practically that condition brought about as the resultant of those forces which create in their owner a longer or a shorter 'expectation of life.'"

From this step to the question, Would it not be possible, by exalting the mother's physical vigor or depressing that of the father—or by a combination of the two methods, just enough to produce a marked preponderance of vigor in the mother's favor—to induce the conception of boys, and *vice versa?* was an easy transition. Dr. Davenport essayed to prove it first on animals. He records his first experiment, made in 1886, with a pair of fox terriers which had previously always produced more or less even litters. When he depressed the dog's health by confinement, low diet, etc., and elevated that of the slut by fresh air, exercise, plentiful feeding, and so forth, prior to the lining, the gestation resulted in a litter of five dog pups. He repeated the process, reversing the conditions of treatment, with the result that the next coupling produced three bitches and one dog. Dr. Davenport's views in this matter are supported by the practice of a "station" manager in New South Wales, who, when desiring to perpetuate any strain of cattle and requiring to produce a heifer for that purpose, stall-feeds the bull and turns the cow out to grass prior to service, and reverses the treatment if a bull calf is desired.

The author next put his plan into operation in the human family, and records several instances. On the whole he has had forty-five cases in twelve years. In six instances treatment was futile and was not persevered with on account of organic diseases, phthisis, cancer, marked chronic nephritis, etc. Of the remaning thirty-nine families all were picked examples for the application of his methods; each family contained an undue proportion of either male or female children, and in every instance he found the same conditions existing in a more or less marked degree—viz., the majority of male children possessed a proportionately more healthy father. The results were thirty-two successives and seven failures; but in four of the failures no pregnancy could be induced, and of the three others the author says that the measures were undertaken in so half-hearted a manner that he was not surprised at failure.

The following is the author's *modus operandi:* He first makes a careful examination of both parents with a view to treating and eliminating any habit, disease, functional disorder, or pathological defect that might have any bearing on the health of the weaker parent. Sexual intercourse is next forbidden for one month and both parents are placed under treatment to build up and elevate the health of the previously inferior parent, and to depress the general tone and health of the previously superior. The first object he achieves: *a.* By a suitable *régime* of stimulating diet especially adapted to the constitution to be dealt with, and varying, of course, considerably in different cases. *b.* By insisting on regular hours for sleep, exercise in the open air, and sunshine. *c.* By a course of tonic and stimulating drugs. *d.* By means of the many other ways known to all and used for building up the general tone of the system—viz., change of air if necessary, cessation from overstrain in mental or physical work, etc.

The latter object the author attains by *a*. Recommending a course of low diet into which non-nitrogenous elements largely enter. *b*. By ordering a maximum of sedentary and brain work with a minimum allowance of sleep. *c*. By a course of nerve sedatives, bromides, iodides, etc., for the latter half of the month. The month having expired, intercourse is permitted on the third day after the cessation of menstruation. If pregnancy ensues, all further treatment is unnecessary, the author believing that the sex is determined at the instant of conception. The depression of the stronger parent is entirely temporary and disappears on the resumption of the ordinary mode of life.

As to the theories of others, the author points out that Girou's theory, propounded in 1823, that the offspring follows the more vigorous parent, would ultimately result in "the establishment of a colony of males." Cross heredity tends, however, to the maintenance of periodically recurring equilibrium. Hofacker's and Sadler's law, promulgated between 1828 and 1830, that "the sex of the child depends upon that of the parent whose age is in excess of that of the other," simply, according to Dr. Davenport's contention, resolves itself into cross heredity, inasmuch as advanced age means, *other things being equal*, lesser "expectation of life." The well-known fact of the preponderance of male births after a war the author attributes to the exhaustions and anxieties of warfare having depressed the male population and so placed the women in the stronger position, whence they produce male children.

Finally, Schenk stated in 1898 that the urine of women bearing only female children invariably contained a larger or smaller quantity of sugar. On this the author asks, "Is not the glycosuric mother the less healthy parent," and Schenk's rule therefore only *one possible factor* out of the more general and broader law of cross heredity?

There is undoubtedly a great deal of thoughtful work in Dr. Davenport's paper, and it is of such a character and so plainly set forth that it can be followed up by the great mass of general practitioners and obstetricianism in every country. By this means a consensus of facts could soon be obtained sufficiently large to generalize safely upon. There is no mystery enshrouding Dr. Davenport's views, no attempt to confine the practical application of them in his own hands; those facts in themselves render them deserving of careful consideration and experiment, whatever the actual result may be.—*N. Y. Medical Journal.*

THE PROGRESS OF MEDICINE IN THE NINETEENTH CENTURY.

Dr. Frederick J. Roberts, in the course of an address before the Medical Society of London, which is published in *The Lancet* of October 14, 1899, tells us that a distinct advance in practical therapeutics which must not be forgotten as a development of this century is in the modes of administration of therapeutic agents, the preparations and appliances intended for local purposes, and the instruments or apparatus invented for making applications to, or otherwise treating, special parts. At the present day a visit to the exhibition usually arranged for our edification at the annual meeting of the British Medical Association and at various congresses is a revelation as to what has been and is being accomplished in this direction, in which, of course, our profession is greatly aided by pharmacists and instrument-makers. Reference may be made to the many palatable, convenient, compact, and elegant preparations given to us by pharmaceutical chemists for internal administration, in contrast with the boluses, powders, electuaries, and horribly nauseous draughts and mixtures of the old pharmacy; and to the introduction of the hypodermic syringe, the value of which to the practitioner can hardly be overestimated. Undoubtedly there are serious drawbacks associated with these advances which we must never ignore, and these are the facility with which the laity can now get strong drugs in convenient forms for their own use without any medical supervision, and the danger of falling into the habit of using powerful subcutaneous injections, which has done, and is still doing, such serious mischief, not only amongst patients but also to members of our own profession, a fact which is but too familiar.

During the earlier part of this century, and indeed until within a comparatively recent period, treatment consisted almost entirely of the use of drugs in different ways. By degrees the great principles of hygienic treatment took hold of the profession and the public, and they are now well to the fore and highly popular, at any rate in theory. Surely this is a great step in advance in practical therapeutics, and nowadays, apart from the more obvious general hygienic measures, the means for carrying out some of the most important of these principles, such as change of air, suitable climate, sea voyages, the use of baths, and the like, are so increased and improved, and so much within the reach of large numbers of the community, even to some extent among the poorer classes, that there is no excuse for neglecting them. Diet, too, has come to occupy a far more conspicuous place in treatment than formerly, and is regulated on more scientific principles, certainly to the general advantage, though there is, perhaps, a tendency in the profession on the whole to make more of questions relating to food and drink than seems absolutely necessary, which renders it very difficult to deal with not a few patients who, being quite "up-to-date," expect to receive the most explicit directions as to diet under every conceivable circumstance, and suitable for every complaint, real or supposed, from which they may happen to suffer. And what shall be said about nursing, which to-day is so universally and rightly regarded as one of the most important and essential parts of modern treatment? Some of us must have a vivid recollection of the hospital nurse of former days, who was as incompetent as she was unattractive and insanitary, and of the time when private nursing as it now exists was practically unknown. The progress that has been made in this department is simply amazing, and those who are only familiar with the present state of things can have no possible conception of the magnitude of the changes which have taken place during the last thirty or forty years, and of the comparative advantages in the way of capable and reliable nursing which modern treatment affords.

A conspicuous, and within due limits really serviceable, development of modern therapeutics is the introduction or more systematic working-out of what may be termed "special methods" or "combinations of methods," which are still being added to, and intended either for the purpose of producing some particular effect which might be beneficial in various conditions, or for the treatment of some individual disease or class of diseases. It would be quite out of place to attempt even to enumerate these methods here; but they are not all really novel, some being the revival of methods formerly practiced, or the application, more or less elaborate, of well known physical principles. Others, however, are the natural outcome of the more or less modern discovery of forces, or elements, or facts previously unknown, which under judicious and intelligent guidance have been found to be highly valuable in treatment when properly employed. Others, again, are essentially recent and original, especially those which we owe to the truly astonishing and far-reaching results of investigation and research in relation to bacteriology and kindred subjects.

Taking a comprehensive view of these modern methods, they certainly are so far to be commended that they present a practical protest against the needless and excessive use of drugs which, when rationally and honestly employed, are often of unquestionable advantage in treatment. Some of them give evidence of the possession, on the part of those who are responsible for their introduction to the profession or their practical working, of considerable ingenuity and inventive ability; others of a profound knowledge of human nature. It is a pity that they afford excellent opportunities for the most outrageous quacks outside the profession to enrich themselves at the expense of the idiotic simpletons who are still found in such large numbers even in this highly educated and enlightened age. Of this statement glaring and really ludicrous examples could be given. But what can we expect when so many men and women of intellect and culture, aggressively scientific, will to-day throw over everything that is orthodox in our profession and pin their faith upon any system, however pretentious and absurd it may be, which gives itself a high-sounding name, and will even prostrate themselves before the Christian Scientist!

THE CLINICAL MANIFESTATION OF A PHYSIOLOGICAL FACT.*

By **WILLIAM H. ROBEY, Jr., M.D.**, Boston.

This brief paper is presented because the physiological fact mentioned does not seem to be generally appreciated, no clinician whom I have questioned being able to tell whether the sign was pathological or not. The matter came to my notice in the following matter: A man brought his four-year-old child to the out-patient clinic for examination. He said that the child was sitting on the kitchen table about seven o'clock the previous evening when he suddenly fell, having apparently lost his balance, struck his head on the floor, and became unconscious; he vomited at the time and had been dull and stupid ever since. The father held in his arms a pale, limp, unconscious child. The history, as given by the parent, suggested some cerebral condition, and with that in mind we first examined the eyes, and found that the pupils were contracted to pinhole size, equal, and unaffected by light. Then the patellar reflexes were tried and proved to be normal, but in tapping the knee the child regained consciousness, sat up and looked around; the pupils instantly dilated to their normal size, and we found, to our surprise, that a healthy, sleeping child had merely been wakened. The man had not made it clear to us that the child had eaten his breakfast, and that he had brought him to the hospital because he feared some possible obscure injury as the result of the blow.

---

*Read before the Clinical Club, November 17, 1899.

Only a few days ago I saw another child, whose parents gave almost the same history of a fall. He was apparently asleep at the time of the examination, and the pupils were contracted to pinhole size. In this case the reflexes were tried and the child was completely examined without waking him. When he was wakened the pupils instantly dilated.

Since the first experience I have examined twenty-two normal sleeping children; in all, the pupils have been pinhole, and have dilated instantly on waking. In several instances the children were examined and handled exactly as if they had been awake without, arousing them. For obvious reasons the eyes of the children have been examined. In children who have been pinched and stirred up without regaining consciousness the pupils have partially dilated under the sensory stimulation.

In the 1878 edition of his "Physiology" Foster says: "The pupil is contracted when we accommodate for near objects, when the retina is stimulated, as when light falls on the retina, the brighter the light the greater the contraction. The pupil is also contracted when the eyeball is turned inwards, when the aqueous humor is deficient, in the early stages of poisoning by chloroform, alcohol, etc., and in nearly all stages of poisoning by morphia, calabar bean, and some other drugs." In the 1880 edition he mentions all of these causes and adds, "in deep slumber."

The twelfth edition of Kirke's "Hand-Book of Physiology" (1888) mentions all of the above causes save deep slumber. The "American Text-Book of Physiology" says: "In sleep, though the eyes are protected from light, the pupils are strongly contracted, but dilate on stimulation of the sensory nerves, even though the stimulation be insufficient to rouse the sleeper."

The drugs which cause contraction of the pupil's are physostigmine, nicotine and pilocarpine, by action locally or through the circulation; cocaine locally causes transient contraction, which is followed by wide dilatation; conine applied locally contracts through conjunctival irritation, but the drug has gone out of use. The most important drugs which cause contraction of the pupil are opium and alcohol, the latter less marked than the former.

The cerebral diseases with uniformly contracted pupils are few, and the contraction is not a constant symptom. Myosis occurs in syncope. In the unconscious state caused by a blow, with symptoms of shock producing a condition sometimes spoken of as "concussion," the pupils usually react to light.

When an adult is handled incident to examination, if he is merely sleeping the manipulation will waken him, but fatigued children sleep soundly and are sometimes aroused only after considerable effort; but, once awake, they generally remain so, differing from the drowsy child whose pupils are contracted by some drug. It seems to me to be of some importance to remember the fact that the pupils are strongly contracted during sleep, and that they are instantly dilated on regaining consciousness from healthy slumber.

INFLUENCE OF MATERNAL INEBRIETY ON THE OFFSPRING.

Dr. W. C. Sullivan, of H. M. Convict Prison, Parkhurst, publishes in the *Journal of Mental Science* (July, 1899) a number of observations of the rôle of maternal alcoholism as an agent in race degeneracy. It has been observed by most authorities that those classes of individuals who exhibit marked incapacity or inability to adapt themselves to normal social conditions—*e. g.*, many feeble-minded and imbecile subjects and a considerable portion of habitual criminals and prostitutes—are largely recruited from the offspring of the alcoholic. Thus, of a series of 1,000 idiots examined by him Bourneville noted alcoholic parentage in 62 per cent., Marro observed an alcoholic parentage in 46 per cent. of criminals, while 45 per cent. of inmates in the Swiss prisons for juvenile offenders showed a similar past; and Madame Tarnowsky found that 82 per cent. of Russian prostitutes were the offspring of alcoholic parents. To observations of this kind it has been objected that, as parental drunkenness is an easily traceable antecedent, it would tend to figure disproportionately among the causes assigned in such inquiries, and that in many cases it may get the credit of bringing about in the stock a degenerative taint which really existed prior to it, and of which it was, in fact, merely a symptom.

To avoid this possible source of fallacy it seemed desirable to adopt at the outset an opposite standpoint and to take as an end of the investigation not alcoholism in the ancestry of the degenerate, but degeneracy in the descendants of the alcoholic. For this purpose a series of cases of chronic drunkard women who have borne children were selected from the female population of Liverpool prison, among whom habitual inebriety had been very prevalent. All cases exhibiting a phthisical or syphilitic history were excluded from the inquiry, as well as cases which were the subject of marked neurotic taint as manifested by a specially early and violent cerebral reaction to alcohol. This process of selection avoids the more obvious source of fallacy in such inquiries, though certain qualifications are still to be considered. These drunkards who find their way to prison belong, for the most part, to the lowest grade, where even moderate alcoholic indulgence implies diminution of other food supplies; further, their excesses are, as a rule, persistent and intense. Again, it is an unquestionable fact that in the criminal as in the insane alcoholic the nervous manifestations of intoxication occur with notable frequency, while non-nervous disorders are relatively rare and secondary. Thus, in the cases comprised in this inquiry the special nervous localization of the poison was very marked.

Thirty-one of the women had suffered from one or more attacks of alcoholic delirium, while twenty-four others, without actual delirium, had occasional visual hallucinations. Suicidal impulses, disorders of cutaneous sensibility, and cramp in the extremities were noted in a considerable number of cases. Similar characteristics were found to be present in the case of alcoholic relatives of the patient. Of 120 female inebriates whose histories were trustworthy there were born 600 children, of whom 265 (44.2 per cent.) lived over two years, while 335 children (55.8 per cent.) died when under two years of age, or were still-born. With a view to establishing comparisons with a healthy non-alcoholic standard it was found that 21 of the women were able to give details regarding female relatives (sisters or daughters) of sober habits who had contracted marriages with sober males and had borne children. Thus, of sober mothers, 28 in number, there were born 133 children, of whom 33 (23.9 per cent.) died when under two years of age. Thus, the death-rate amongst the children of the inebriate mothers was nearly two and a half times as great as that amongst the infants of sober women of the same stock.

Another feature established by the observations was the progressive death-rate in the alcoholic families when three or more children were born. This will be best seen from the following table:

	Cases.	Dead and Still-born. Per cent.
First-born	80	33.7
Second-born	80	50.0
Third-born	80	52.6
Fourth- and fifth-born	111	65.7
Sixth- to tenth-born	93	72.0

These figures illustrate very clearly the progressively augmenting results of the influence of the mother's alcoholism on the offspring. The type of alcoholic family suggested by these results—a type characterized by decrease of vitality in the successive children—is fully realized in many of the observations, of which the following is an instance: S., aged thirty-four years; previous imprisonments, 41. Drunkard since first confinement; beer and spirits. Suffers from gastric catarrh and cramps; had one attack of delirium tremens. Attempted suicide twice; hysterical convulsions. Husband drunkard; never delirious. His and her parents sober. Six children; first, second, and third living, healthy; fourth, aged six years, of low intelligence, habits bad; fifth, aged four years, epileptic idiot; sixth, still-born; seventh, a recent abortion. In other cases we find the first-born healthy, one or two of the next dying from infantile convulsions, and the last child or two still-born.

Of the children comprised in the series 219 lived beyond infancy, and of these nine, or 4.1 per cent., became epileptic—a proportion extremely high as compared with the frequency of epilepsy in the general mass of population, which, according to Bruce Thompson, is less than 1 per 1,000. —London *Lancet*, Sept. 30, 1899.

PITHY, PUNGENT AND POINTED PARAGRAPHS,

REPRINTED FOR THE PERUSAL OF PHYSICIANS WHOSE
PARTICULAR PENCHANT IS PERTINENT PROSE.

VICARIOUS MENSTRUATION FROM THE GUMS.—Dr. W. George Beers (*Dominion Dental Journal*, November) reports that he has had a very complicated case of contraction of the superior and inferior teeth to contend with in a patient aged seventeen, which afforded an opportunity for observing a very interesting case of vicarious menstruation. The day after he had taken the impression for models the patient came by appointment, and he noticed such an effusion of blood, about the gingival margins especially, and the gums generally, that at first he suspected that the blood in the mouth came from the lungs. But upon careful observation there was no mistake about the matter, and the surprise was greater because the gums were healthy and the teeth free from caries or calculus. A week afterward Dr. Beers inserted the apparatus for expanding the superior arch. It was worn with comparative comfort until the periodical return of the menses, when the margins of the gums—which the plate did not touch—were inflamed, as if by the rough inner edges of a badly-fitting vulcanite plate, and the bleeding reappeared. Upon examination of the apparatus there was no exciting mechanical cause to produce such a result, and he was at a loss for an explanation until he found that the blood was non-coagulable, and that the same symptoms of hysteria were present as had been observed the previous month. The author then made it his duty to extend his inquiries, and learned that the condition was regularly present each month, associated with severe migraine, and that the bleeding began and ceased coincidently with the recurrence and cessation of menstruation. At the time of writing the ninth observation had been made.

TACT.

There is no other situation in life which requires the exercise of so much tact as is needed in the practice of medicine. The physician who has sufficient knowledge of human nature to appreciate the boundless possibilities for good open to the possessor of tact, and enough sympathy and genuine kindness of heart to utilize it for the benefit of his patients, will grow in personal power and come to exert a magnetic influence which is irresistible.

Tact will thaw out reserve and indifference in the most timid or cynical patients. An impersonal air, a genial manner, an assumption of attention to and interest in the individual patient will so put him off guard that the case can be probed to the bottom and the truth got at.

Moreover, this display of tact heartens the patient. The sympathy and managing ability of the doctor exert a beneficial influence on the patient. He leaves the doctor in a different frame of mind from that which brought him. He feels that he has dropped his burden of woe. He has placed it in competent hands. That doctor understands him and is going to do something for him. He is accordingly much cheered.

The effect of such a doctor's attitude toward his patient is that he has efficiently prepared the ground of that patient's mind and heart to get the best results from his treatment. He has the patient's will and wishes co-operating to the utmost with his skill in therapeutics. Naturally the tactful doctor achieves a success which his more selfish and narrow competitor criticizes and envies.

Tact is also requisite to get the full benefit of suggestion, to avoid arousing the combativeness of patient and friends by blunders of speech, etc. Physicians sometimes destroy their usefulness by stumbling against the cherished prejudices of their patrons,by unnecessarily attacking hoary beliefs, by remarking upon personal peculiarities, by making unintentionally disparaging remarks upon the circumstances of the family, invidious comparisons, gloomy predictions, by touching sore spots in a coarse, clumsy, unfeeling manner.

Tact is needed to make the best of your nurse to insure good hygiene for your patient. A word or two of explanation as to your object will often make the family do things which they might otherwise regard as foolish and unnecessary, at the same time feeling their faith in your wisdom.

Of course, this manifold effort is tedious and exhausting in one sense, but in another sense it quickens the doctor's interest in his calling, and invests the practice of medicine with a new, ever-growing charm, which only the moral and spiritual elements of life can inspire or supply.

Tact is a natural gift, well developed in some; others possess only the germ, but, like every other faculty, it can be cultivated, and such cultivation will richly repay the doctor. So, if you are naturally lacking in imagination, just stop to put yourself in the other man's place and remember the golden rule.—*Medical Brief.*

THE LONG SUFFERING OF MEDICAL MEN.

Scarcely anyone outside the profession can realize the extent to which, in these latter days, the personal solicitation of medical men by representatives of book publishers and drug firms has progressed. Most of us, from a desire not to be uncivil, have thus far submitted to the imposition with what grace we could summon, causing thereby a vast increase in the number of agents, a growing consciousness on their part of owning the entire profession, an office chokeful of useless samples of every possible and impossible formula, and a damaging loss of the physician's time. We believe that drug men should confine themselves and their advertising matter to the press and the mails. It is trying enough to one's temper to receive by mail a sealed advertisement, but when we are desired to sit meekly for a quarter or half hour every day and listen to a glib discourse on the chemistry of foodstuffs, or the predigestion of milk, or the destruction of bacteria by a patented germicide, we think it time to rebel. Many drug firms confess, if questioned, that they maintain at a loss the practice of visiting the houses of physicians and leaving samples of medicines and appliances; they feel, however, that they must maintain the nuisance in order to keep the pace set by business rivals. The following notice was recently found in the hallway of a physician of large practice in this city. He claimed to have been "driven to it by persecution:"

> "Dr. ——— positively refuses to be interviewed
> by representatives of any book-publishing firm,
> or the makers or agents of any line of drugs,
> proprietary preparations, or surgical dressings."

We simply quote this as it stands, and leave our brethren to meditate! B.

THE ANTIVIVISECTION BILL AGAIN.—Dr. W. W. Keen, of Philadelphia, as president of the American Medical Association, has issued the following appeal: "To the members of the medical profession in the United States: The cause of humanity and of scientific progress is seriously menaced. Senator Gallinger has again introduced into Congress the bill 'for the Further Prevention of Cruelty to Animals in the District of Columbia,' which he has so strenuously and misguidedly advocated in the last two Congresses. Its present number is 'Senate Bill No. 34.' Twice the committee on the District of Columbia has also unfortunately and misguidedly reported the bill with a favorable consideration. The bill is speciously drawn to seem as if it were intended only in the interest of prevention of cruelty to animals. The real object of the bill is twofold: First, to prohibit vivisection, and, secondly, to aid the passage of similar bills in all the State legislatures. I need hardly point out to you that this would seriously interfere with or even absolutely stop the experimental work of the Bureau of Animal Industry and the three medical departments of the government, the army, the navy, and the marine hospital service. The animals themselves might well cry out to be saved from their friends. No more humane work can be done than to discover the means of the prevention of diseases which have ravaged our flocks and herds. All those who raise or own animals, such as horses, cattle, sheep, pigs, chickens, etc., are vitally interested in the preservation of their health and the prevention of disease. The inestimable value of these scientific researches as to the prevention and cure of disease among human beings it is superfluous for me to point out. Modern surgery and the anti-toxin treatment of diphtheria alone would justify all the vivisection ever done. As my attention has been called officially to the introduction of the bill, I take the opportunity of appealing to the entire profession of the country to exert themselves to the utmost to defeat this most cruel and inhumane effort to promote human and animal misery and death and to restrict scientific research. It is of the utmost importance that every physician who shall read this appeal shall immediately communicate especially with the Senators from his State, shall invoke the aid of the Representatives from his or other districts in his State, and by vigorous personal efforts shall aid in defeating the bill. It is especially requested also that all of the national, State, and county societies at their next meeting take action looking toward the same end. If regular meetings are not soon to be held, special meetings should be called. Correspondence is invited from all those who can give any aid. The committee on the District of Columbia consists of Senator James McMillan (Michigan), chairman, and Senators J. H. Gallinger (New Hampshire), H. C. Hansbrough (North Dakota), Redfield Proctor (Vermont), J. C. Pritchard (North Carolina), Lucien Baker (Kansas), C. P. Wetmore (Rhode Island), C. J. Faulkner (West Virginia), Thomas S. Martin (Virginia), William M. Stewart (Nevada), and Richard Kenney (Delaware). Personal letters may be addressed to them or to other Senators. Petitions should be addressed to the Senate of the United States.—*Medical Record.*

POISONING BY MERCURIAL INJECTIONS.

Though numerous authorities recommend mercurial injections in the treatment of syphilis and though the practice has now become extensive, any advantages over established methods still remain to be proved. Successful results have been recorded on all sides, but in what more successful than with other methods of treatment is a question scarcely considered. Indeed, the same holds true of most of the new drugs and new methods which deluge therapeutics. Furthermore, mercurial injections have a distinct disadvantage over ordinary methods of treatment. An element of danger is introduced, and in several cases fatal results have ensued. This fact is not so well known as it should be, possibly because most of the cases have occurred on the continent. At the meeting of the Société Médicale des Hôpitaux of Paris on November 17, MM. Gaucher and J. Noel read notes of the following case in which death followed injections of calomel. A man, aged fifty years, had paraplegic symptoms apparently of alcoholic origin, but which were treated by a practitioner as syphilitic. Iodide of potassium was given and Vigier's preparation of calomel (which contains five centigrammes to the cubic centimetre) was injected. The first injection was given on June 26, the second on July 1, and the third on July 6. In all 15 centigrammes of calomel were injected. No improvement resulted. In the middle of September the patient was able to move about on crutches. About October 15 he began to complain of digestive troubles. On the 20th he had severe itching all over the body and several red patches like those of urticaria appeared on the forehead. The liver was painful and extended three fingers' breadth below the ribs. On the 21st the face was covered with a rubeoliform eruption and there were sanguineous diarrhœa and vomiting. The eruption appeared over the whole body. There were hebetude, scarcely perceptible pulse, incessant vomiting, ptyalism, fœtid breath, and swollen tongue and gums. He died on the 29th. MM. Gaucher and Noel insisted that no other diagnosis than mercurial poisoning was possible. They explained the long interval—nearly four months—between the injections and the production of symptoms by the fact that insoluble mercurial salts remain for a time encysted in the tissues and inert and then suddenly become dissolved. This is precisely the danger of calomel injections. Injections of soluble salts were recommended instead because the effects could be easily watched. In the discussion which followed M. Merklen and others pointed out that an interval of three or four weeks had been observed between the injection of calomel and the production of symptoms ("*stomatite mercurielle tardive*"). That a dose so small as fifteen centigrammes (two and a quarter grains) should prove fatal was explained by the ill-health of the patient.—*The Lancet.*

ARREST OF HICCOUGH BY DEPRESSING THE TONGUE.

Dr. Louis Kolipinski reports in the *Maryland Medical Journal* the arrest of persistent hiccough by depressing the tongue, which effect was accidentally discovered. A patient suffering from chronic gastritis was attacked by hiccough, which had persisted for four days before being seen by the author. He complained of the fullness in his throat, a condition which he thought the result of the hiccough. He was directed to sit up, and with a large spoon handle the tongue was pressed down and back with steady force to allow inspection of the fauces. The soft palate was found to be congested and the uvula thickened and elongated. The hiccough recurred twice, and each time the elevation of the soft palate and uvula was noted. Firm pressure on the tongue with the hope of further noting the action of the palatal muscles was continued, when, to the author's surprise and the patient's astonishment and joy, the hiccough ceased. Under a dose of morphine and chloral he passed a comfortable night. "An hour after my departure," says the author, "the hiccough returned, but the patient, with great zeal and confidence, placed himself in front of a mirror, passed the spoon handle to the back of the tongue, and with both hands depressed and steadied it. The hiccough at once ceased. In the morning, on awakening, the hiccough again returned, but stopped spontaneously on his getting up and dressing. Two days later it reappeared, but was promptly arrested by the patient himself in the manner described. The time required in each instance to accomplish the desired result was one minute or less."

PRESERVATION OF SURGICAL NEEDLES.

At a recent meeting of the New York Surgical Society, Dr. Dawbarn recommended the use of a saturated solution of sodium carbonate (washing soda) in water, for the purpose of preserving surgical needles. He stated that in his opinion this method of keeping the needles and cutting instruments untarnished was superior to any other which had thus far come within his experience. He showed needles kept bright in this way for a year and more. Most of the other methods are open to some objection. Perhaps the most common method is to sew the needles into an oiled cloth, but this does not always prevent flecks of rust. As to keeping them in carbolized oil, this to some extent dulls the edge of the needles just as carbolic acid in watery solution does that of scalpels; lysol being a dark solution, the needles are not very easily seen in it; calcium chloride in a closed place to keep the air dry, with the needles lying on a dish near it, produces a curious tarnish, almost like rust; in Fuller's earth or other powders it is difficult to find the smaller needles; in alcohol, unless it is absolute (and absolute alcohol ceases to be absolute very soon), the needles will finally rust. A solution of borax in water, as recommended by M. Maréchal, will also rust the needles as soon as the thin plating, which all needles have at first, becomes worn away from usage, exposing the steel beneath. Perhaps keeping needles in liquid petrolatum is almost as good a way as that under discussion; its only objection being the unpleasant oiliness. Calcium chloride in absolute alcohol—thus keeping it absolute—is effective, but comparatively expensive. The same is true of placing a sheet of gelatin in the absolute alcohol, the gelatin by its affinity for water keeping the alcohol absolute. The method now advocated—washing soda dissolved in water to saturation—is inexpensive and satisfactory to the author.

THE USE OF QUININE IN MALARIAL HEMOGLOBINURIA.

Steggall, of Costa Rica, has reached the following conclusions upon this subject: (1) Quinine causes irritability of the kidneys and may cause hemoglobinuria. (2) Malarial attacks in chronic cases with malarial cachexia may cause hemoglobinuria. (3) In these cases quinine has lost much of its specific effect, and large doses must be exhibited. Should there be a periodicity, we must give the quinine before the time of attack. (4) The action of quinine must be assisted by such drugs as iron and arsenic, and, more important even than quinine, the liver must be acted on well, and the effect kept up. Dr. Steggall says he has never been able to cure an attack of hemoglobinuria without getting the liver active; the bilious vomiting in these cases sufficiently indicates the necessity of this.—*Medical Record*, Aug. 19, 1899.

CANNABIS INDICA IN EXCESSIVE MENSTRUATION.

While the curette is the ideal instrument for attacking excessive menstrual flow, there remains a number of cases that will not permit operation, and others in which the trouble is entirely one of functional derangement. In such cases, especially where the exciting cause is an irritation arising in the Fallopian tubes or in the ovaries, 10 to 15 drop doses of tr. cannabis indica, given every three or four hours, is often curative. It should be commenced a few hours after the flow sets in, say twelve to fifteen hours after, and continued until its effect is produced or the symptoms abate. Much will depend upon the character and purity of the product used as to the amount of benefit received.

Childbirth with Savage and Civilized Women.—The labors of savage women are known to be safe and easy. How does civilization render labor difficult? Dr. Reid holds that heredity is largely responsible;

that women with small pelves tend to have daughters with a like peculiarity, and that the individual born with a large or small head has a tendency to transmit to his or her children a similar cranial formation. When a savage woman has a small pelvis or a large-headed child she generally dies in labor, and thus, generation after generation, narrow hips and large heads are eliminated, while the right proportion between head and pelvis is secured. In civilized countries many small-hipped and large-headed children are annually preserved. If these perished as they would among savages, the average difficulty of labor in the next generation would be appreciably ameliorated. But, as Dr. Purslow (Birmingham) pointed out, the difficulty of labor in civilized women was often due, partially at least, to deficient power of the expulsive muscles, the result of the use of corsets and the want of exercise. Posture may also to a certain extent be responsible. Savage women almost invariably assume the squatting position. If Dr. Reid's deductions are as sound as they are logical, there will be a large and increasing field for the gynæcologist of the future.

TO PREVENT INTOXICATION FROM MALE FERN.—Professor Grawitz has observed a number of cases of icterus, gastro-intestinal catarrh, renal and liver troubles consecutive to the use of oleoresin of male fern for tapeworm, and warns (*Journ. Amer. Med. Asso.*) against its use by anemic persons, or when any special organ is affected, as predisposing to intoxication. The twenty-gram doses of old days have been abandoned and eight to ten grams for adults and half this for children over six years is now the usual dose. It should never be administered with oil as a vehicle or purgative, as the oil favors its absorption. Grawitz also advises against "preparing the patient" by reducing the amount of food and taking the extract on an empty stomach. The morning of the cure the patient takes Carlsbad or sulfate of magnesium, and, after it has operated, the remedy is taken with coffee. He has had a hundred consecutive cases without a single accident, and negative results have been extremely rare.

APOMORPHINE AS A HYPNOTIC IN ALCOHOLISM AND MANIAS.—Dr. C. J. Douglass of Boston, in discussing the various hypnotics useful in alcohol delirium, says, in the *New York Medical Journal:* There is, however, one harmless remedy that will produce sleep in a few minutes, even when the patient is suffering with the wildest delirium. That remedy is apomorphine. I inject subcutaneously just enough to produce slight nausea, but not enough to cause vomiting. One-thirtieth (1-30) of a grain is the average quantity required, but individual susceptibility to this drug greatly varies. In a few minutes after administering the remedy perspiration appears and the patient voluntarily lies down, when a sound and restful sleep immediately follows. This sleep lasts at least an hour or two, and, if other sedatives were previously given, it will usually last six or eight hours. The use of apomorphine in this manner and for this purpose is, I believe, original with me. While its value has remained so long unrecognized by the profession, yet in point of fact there is no hypnotic in our materia medica that is at once so prompt, so safe, and so sure. It is of special value in all forms of mania, regardless of the cause. It may also be given in full emetic doses in many cases of alcoholism with marked benefit. I have frequently had such patients express gratitude for the great relief afforded by this emetic. It seems frequently to act as almost a specific in relieving the alcoholic craving.

Dr. E. G. Zinke, of Cincinnati, declares: If we know any one thing to-day it is that in removal of cancer from the breast we should take away the pectoralis major and minor, whether we have discovered any enlarged lymphatics or not, and no man would be justified in removing a cancerous breast unless he removed the muscles, too. In ninety-nine out of one hundred cases enlarged glands will be found below the muscles, and then we may search for additional glands in the axilla.

Dr. Ap. Morgan Vance, of Louisville, says: No injury about the head is of so little importance as to be disregarded, and in cases where there is any doubt we ought to make an exploration, because simple incision of the scalp is not dangerous; and if we find no fracture of the outer table, but symptoms point to a fracture of the inner table, we ought to trephine, because the mortality following the operation is comparatively slight and the prognosis without operative measures extremely grave.

DIRECTIONS FOR THE STERILIZATION OF CATHETERS AND BOUGIES.

Nicoll gives the following directions for the sterilization of catheters and bougies:

Bougies.—Gum-elastic bougies will not bear heating to a temperature sufficient for sterilization. Soaking for fifteen minutes in carbolic acid solution 1 in 20, for half an hour in 1 in 40, or for an hour in perchloride of mercury 1 in 1,000, renders the surface so sticky that the towel adheres in the process of drying, and the bougie becomes covered with fluff. After several soakings the surface becomes permanently dull and sticky and unfit for use. Dr. Schimmelbusch says that "a smooth bougie or catheter can mechanically be made externally free from germs by rubbing it with a piece of sterilized gauze and warm water." To test this a series of six gum-elastic bougies in use from six to eighteen months, after being employed in cases of stricture, were washed with tepid water and soap, rinsed in cold running water, and dried with thorough light friction with sterilized gauze. They were then rubbed on the surface of acid and alkaline agar tubes. In one case colonies of an unidentified coccus appeared, in another a patch of penicillium. The other ten tubes remained sterile. Six bougies soiled with pus were similarly treated; all the tubes remained sterile. In other experiments instead of the gauze an ordinary towel fresh from the laundry was used, and similar results were obtained. It appears, therefore, that antiseptic solutions which rapidly destroy instruments are unnecessary for sterilization.

Catheters.—Red rubber catheters (Jacques) may be sterilized by boiling or steaming, or may be soaked for months in carbolic solution (1 in 20) or perchloride of mercury (1 in 1,000) without damage. A rubber catheter may be used daily for six months without becoming unfit for use, if washed every day with hot water and soap, and put to soak in carbolic lotion for the remainder of the twenty-four hours. But there are certain red rubber catheters which rapidly deteriorate under repeated boiling, and all rubber catheters ultimately do so. Prolonged and repeated soakings in antiseptics have little effect. By experiments the writer has proved that rubber catheters, boiled, steamed, or soaked for four hours in the lotions mentioned, are rendered sterile internally and externally. But gum-elastic catheters, like bougies, will not stand the lengthened and repeated soaking necessary for sterilization. There is no entirely reliable method. For practice the writer has formulated the following rules:

(1) Avoid as far as possible the employment of catheters. In cases of stricture it can only be very exceptionally that a catheter is called for. Bougies, which are readily sterilized, will do all that is necessary. (2) Where a catheter must be employed, use where possible a red rubber Jacques catheter in preference to a gum-elastic. In retention from atony, spinal paralysis, reflex nervous effects, and other causes, and in many cases of prostatic retention, the former answers as well, and is as readily sterilized by boiling or immersion in an antiseptic solution as is a metal catheter. (3) Where the red rubber fails to pass, the use of metal catheters, especially by the patient, does not commend itself as free from risk of injury. Gum-elastic catheters must therefore be used. If the urine is very septic the writer destroys the catheters used. If the urine is not very purulent or offensive, he washes the catheters externally with soap and water, and then with antiseptic solutions, which is followed by internal steaming. Those that survive he retains. When the regular use of a gum-elastic catheter is necessary, the patient is supplied with a catheter with a well-finished interior. After use he thoroughly washes it, holds it under the tap for a few minutes, and lays it aside in boric acid, weak perchloride, or other weak antiseptic. This only offers a reasonable chance of asepsis, but it is useless to expect an average patient to carry out more elaborate plans. The writer has had glass tubes constructed, which are filled with the antiseptic solution, in which the catheter is placed after use. The solution varies in strength according to the kind of catheter; for gum-elastic catheters it must be weak, red rubber catheters will stand anything.

The late Phineas T. Barnum and the sempiternal Mary Baker G. Eddy deserve a niche in the temple of fame as the ones who reduced the eternal gullible to something like a system. Both were past, the one decidedly past, masters in the art of working the people; both understood how to turn the axiom, "the people want to be deceived, therefore let us deceive them," into dollars. They appealed to the imaginative side of man, and from their own standpoint they said it was good. The one knew that the man is but the child grown up; the other, that man is essentially idolatrous and fetich-worshipping, and that the mass of humanity had rather be fooled than shown its folly. It was Barnum's hobby to have a "What is it?" an acme of mystification, an incarnation of a creature that hitherto existed only in the imagination.

Eddyism is much the same sort of a "What is it?" and invites the exact belief that would give credence to a mermaid and a missing link.

The caged "What is it?" of the showman was found to be a blind, microcephalic idiot, and Mrs. Eddy's peculiar "science" is becoming so much of a joke that it will ere long be laughed out of court like the idiot was out of the side-show.

The only serious side of Christian science is that it sometimes kills its devotees, or more often and more pitifully the children of the peculiar people. But for this phase of it, which is being legally dealt with, the cult is no more worthy of consideration by sensible people than any other worn-out hoax.

Faith-cure, Weltmerism, Dowieism, magnetic healing and the like differ from Christian science in that they possess a grain of truth and are founded upon the well-known, if somewhat over-worked, therapeutic resource, suggestion.

When it is remembered how great is the influence of mind over the body and its ailments, and how many people suffer from *la maladie imaginaire*, we can readily understand the rationale of the cures effected by these so-called systems. It is suggested that the patient be well and at once his mind attaches itself to the new and cheerful thought substituted for his old hopelessness, and he is raised out of his slough of despond and restored triumphantly to health, "after all the doctors had failed." Furthermore, acute diseases tend to get well, and the cure is not due to medicine in any application of the word or the thing, but to entirely natural causes. Faith-cure and its congeners step in here and vociferously claim the cure. Is faith the master of human nature, or nature of faith? Was ever a gross pathological lesion brought to the normal by prayers and genuflexions, and is magnetism powerful enough to draw out a bit of steel buried in the eye? "Canst thou draw out the leviathan with a hook? Canst thou speak soft words unto him?"

The people want to be deceived, that is the *crux* of the whole matter. They lend an attentive ear to any one who has anything marvelous to tell about their bodies and the diseases that affect them. An average layman's knowledge of anatomy and physiology is about equal to that of the Chinese. He may hesitate to believe that the moon is made of green cheese, but he will carry a buckeye in his pocket to ward off the rheumatism, and have his child wear amber beads to prevent the croup, and will give sober credence to the wildest fictions of charlatanry. No bank is so small but has its depositors, no theory is so fanciful, absurd and puerile but has its adherents.

It has been so since there were people enough on earth to strike a balance of human nature, and it will continue so long as men work, laugh, love and suffer.

Magnetic healing and the like (the name is of no consequence) is but a strand in the varicolored fabric of society and civilization. Draw it out and it leaves a dead space that is sure to be filled in by something that fits it.

If it were viewed from the proper altitude its real meanness of proportion could be seen, but we look at it too close and on a level. Then only does it bulk as a competitor.

If there be truth in any of these beliefs it will prevail, and all the husk that envelops it be swept into the rubbish heap.

Mesmer was the forerunner of hypnotism, Hahnemann of small dosage. In both instances that which was true has come to the surface and survived—the untrue has been drowned in oblivion. The same fate will inevitably overtake all untried, unreasonable beliefs, with the exception of Christian science, which awaits total annihilation, and has existed so far merely from a blasphemously alleged connection with the religion of Christ and the Book wherein it is revealed.

CHRISTIAN SCIENCE.

Oh, "God is so Good,"
If we sit down and brood
On the goodness and "Allness," within and without us,
We need have no fear,
Our crackers and beer
Will flow from the "Allness" and goodness about us.
Of course, 'there's no evil"—
God's not so uncivil
To make us imperfect and send us to thunder.
"There's nothing but love"—
In the heavens above,
The pockets of men, and the hearts that beat under.
"There can be no trouble,"
The body's a bubble—
It's all a "mistaken belief" and a dreaming.
God made us to fool us,
Till some one should school us
To see what we see to be only a seeming.
'We are nothing but spirit"—
We really don't hear it,
Or see it, or taste it, or smell it, or feel it,
"There is no sensation"—
Except the temptation
To think what we think when we think we can't heal it.
'Tis quite a mistaken
Idea we have taken,
That there's but one method of race propagation.
A child now to bother
About who's his father
Shows stubborn contempt for the new revelation.
"There's nothing but mind"—
Though created so blind
We're all of us nursing some little "delusion;"
But friends by the score
(For a dollar or more)
Will kindly remove the distressing delusion.
With best of intention,
The Lord failed to mention—
While healing the halt and the deaf and the blind—
The trick of his healing
Was simply revealing
A "mortal deception" of "immortal mind."
And that these signs and wonders
Arose from the blunders
The Father had made in creating mankind;
And, until he was ready
To send Mrs. Eddy,
The world must remain to his purposes blind. —*Medical Times.*

GAILLARD'S MEDICAL JOURNAL.

A MONTHLY JOURNAL OF MEDICINE AND SURGERY

Scientia et Veritas Sine Timore.

PUBLISHED BY THE NEW YORK MEDICAL PUBLISHING CO.,
106 William Street, NEW YORK.

EDITORIAL.

"It's experience that teaches. It's results that count."

The wonderful advancements made in every department of the science of medicine during the latter part of the nineteenth century have been so numerous that it would be useless to attempt a survey, no matter how brief. Yet it seems to us that recent developments made in both the laboratory of the theorist and the office of the active practitioner should be quite sufficient to reverse the attitude of the major portion of the medical profession toward the theories, conclusions and products of the much smaller number who devote their lives and energy to research and experiment for the benefit of the profession and mankind in general.

That there is a large number of medical men who are gifted with more sentiment than sense we must admit, for the sake of honesty, and that these men are the chief evil that lurks in the high road to progress in the science of medicine cannot be questioned.

It is to this latter class—the scientific (?) sentimentalist, so to speak—that our remarks are chiefly directed.

Every observing man of medicine can recall the opposition met with by the developers of the germ theory of disease. Pasteur, Lister, Koch, and others who contributed priceless months to the study of bacteriology were denounced as fadists by that element of the profession to which we have referred.

Modern preventive medicine and sanitary science, by which disease is limited, life prolonged, and the increment of the welfare of civilized man is so successfully cared for, is the result of the unwelcomed investigations of a few. It is safe to say that the most fortunate beneficiary of all is the one who originally opposed and ridiculed the initial investigations made in this field.

Surgery, likewise, has had to contend with the scientific (?) sentimentalists, but the man who has equal cause for complaint is the chemist.

The progress made in synthetic chemistry during recent years is but partly appreciated by the general practitioner. As an example of the progress made in this department of science, as well as to indicate the extent of prejudice, we might mention the fact that salicylic acid was originally obtained from the oil of wintergreen, of which it constitutes the governing part, whereas, at the present time practically all of the salicylic acid is synthetically produced. Indeed, it may be said that the natural, or oil of wintergreen salicylic acid is a curiosity at this time. Certain manufacturers advance the argument that they employ none but that obtained from oil of wintergreen, and attempt to show in various ways that there is a radical difference in the therapeutic value of the two, but extended experience and carefully conducted experiments by the most eminent therapists show conclusively that the physiological action of the two are identical, when both are pure.

Chemistry knows no difference, of course. Chemical products that are pure are identical at all times, no matter from what source they are obtained; or, in other words, there may be several sources from which chemicals may be obtained, but there can be no possible difference in their structure where purity is uniform.

Synthetic chemistry has also enabled us to produce an oil of wintergreen from the salicylic acid, synthetically produced, which is in every way equal to the natural oil, and in some ways superior, principally in that it contains 100 per cent. methyl salicylate instead of 95 per cent. as is the case with the natural oil.

Benzoic acid, which was originally obtained from gum benzoin, is now obtained synthetically, and is admittedly far superior to the so-called natural benzoic acid.

Citric acid, oil of bitter almond and the various essential oils employed in the manufacture of perfumes come to us from the laboratory of the synthetic chemist.

If need be we might mention numerous other agents that enter conspicuously into the physician's list of remedials, but we feel that the above will suffice to illustrate the progress made by a class of men who receive little or no encouragement from the profession in general.

Unquestionably the most valuable agents evolved in synthetic circles have been the antipyretics and analgesics. These remedies have proved incomparable succedaneums for the plant drugs upon which the physician was dependent previous to their introduction.

While we cannot prognosticate the future, we can profit by the past. Let us extend a cordial welcome to every candidate for honors in our modern materia medica. A fair and impartial trial of a new therapeutic agent must result in some good, and we fail to see where evil can follow provided investigations are intelligently pursued.

"Errors like straws upon the surface flow;
He who would search for pearls must dive far below."

That's all.—[Ed. —*Dryden.*

GAILLARD'S MEDICAL JOURNAL.

Vol. LXXII. NEW YORK, FEBRUARY, 1900. No. 2.

INFLAMMATION AS A FACTOR IN AMPUTATIONS AND FRACTURES.

By THOMAS H. MANLEY, M.D., New York City.*

Although much has been written on the process of inflammation since Virchow first promulgated his views on cellular proliferation, and since Pasteur made his experiments on splenic fever and chicken cholera, and, moreover, by the aid of the microscope we are enabled to study more minutely the molecular changes in histological elements, its vital essence yet remains to-day as great a mystery as ever.

The Germ Theory.

Promptly after Lord Lister's experimental studies on the local effects of antiseptic solutions on mutilated tissues, the germ theory was eagerly accepted by the greater part of the profession, and far and wide it was soon proclaimed that *local* infection was the *fons et origo.*

Vascular Disturbances.

At one time it was thought that in all inflammatory lesions there was a diminution in the circulatory movements; and again, at others, that these were quite invariably augmented.

In its *treatment* one will employ extremes of heat, another, of cold; one will enforce severe rest, another, moderate exercise. This elastic empirical state of the therapy of inflammation demonstrates the confused notions which yet obtain as to what it fundamentally consists of.

Its Role in Traumatisms.

In the management of severe traumatisms of the extremities the control of local inflammation constitutes one of the greatest concerns of the practitioner.

In order, in our attempt, to arrest or moderate it, it is important at least that we have some correct idea of its etiology in this class of lesions.

From Mechanical Causes.

Inflammation of a local variety we most commonly witness after violence to a part, aseptic and septic, the latter only when the tissues have been opened. Some go so far as to deny the possibility of inflammatory action without germ infection, but this is nothing more than a speculative notion which will not hold.

---

*Written for Gaillard's Medical Journal.

Increased local oxidation is an indispensable phenomenon in the process of repair of every peripheral injury. Inflammation from physical causes varies in extent and severity according to the violence and quality of force sustained, the condition of the individual, etc. In minor degrees it involves the surface tissues only; tumifaction is but moderate, and effused elements are prompt-resorbed. The most serious type of inflammatory changes which we have to encounter are those succeeding open fractures, in which there has been shattering, and the overlying soft parts are freely exposed.

We are familiar with the difference between a fracture opening widely through the integument and a closed one.

An Open Fracture, per se, Not Especially Prone to Violent Inflammatory Changes.

The tissues in open fractures as met after violent accident, are considerably mutilated, devitalized, and so vitally inert as to favor pathogenic germ invasion. In former times, before antiseptic fluids were employed, staphylococcus and streptococcus invasion, with later widespread suppurative septic absorption and gangrenous changes, often rendered open fractures very serious injuries, frequently calling for immediate or secondary amputation.

Open fractures deliberately induced for the purpose of correcting deformities unite just as quickly, and generally more quickly than many so-called "simple" fractures. Ollier well observes that "when grave local conditions follow an open fracture it is not from damage to the bones, but the soft parts." And so it is with open fractures artificially induced with the aid of an osteotome under aseptic precautions no severe local inflammatory reaction follows, and the fragments unite by *primary* union just as quickly as those in a closed fracture.

Inflammatory Action Succeeding in Parts Destroyed by Extremes of Cold or Heat.

Active vascular disturbance immediately follows on the local destruction of a part by extremes of heat or cold. A part burned through suffers death in all its cellular elements. It is an application of the actual cautery on a large scale, the parts are charred through, or, as sometimes happens, in burns of the second degree, the intensity of caloric falls on and destroys only the integumental investment. A sad illustration lately came under my notice in the person of a physician, the usefulness of whose hands was hopelessly destroyed. On the day before the accident his kid gloves were renovated by some description of spirit, coming from church the next day, Sunday, he undertook to light a cigar on his way home when both gloves ignited. The flames were only extinguished after the integument was roasted to a crust.

Inflammatory reaction following a destructive burn of an extremity or an appendage to it, is always of great intensity, and while it may be in a measure controlled, suppuration and sloughing are inevitable. Antiseptics have made no material impress on the therapy of burns. To prevent infection of a part destroyed by fire we will find, on reflection, must be a preposterous undertaking, for the reason that if an intensity of heat sufficiently great to destroy the vital elements in the tissues will not destroy pathogenic germs, nothing will, even the most potent solutions.

Cold of great intensity congeals all the fluid and semi-solid elements of a limb, or part of it. It holds them in suspended animation. One might say after the manner of John Hunter, that the part is apparently dead, yet the "vital principle" lingers.

Under a proper environment, a part in suspended animation with all the vital processes at a standstill, may yet be completely resuscitated. When the period for resuscitation has passed, decomposition begins, and mortification follows. This is always attended with severe and sometimes destructive reaction. The tone of the tissues contiguous to the primary mortified zone is enfeebled and favors gangrenous invasion. In fact, if erysipelatous inflammation supervene, after the ulceration of a frost-bite begins, not only is the entire limb, but life itself, menaced.

Mortification and Gangrene from whatever cause are always accompanied with various grades of inflammation, the latter invariably supervenes in tissues first involved by febrile changes, sometimes in parts never mutilated, but seized on by some lethal element of dreadful destructive energy introduced from without, and sometimes, too, by intrinsic agencies acting through the blood current.

Septic Inflammation or Septic "Infection" in Open Fractures.

Lord Lister made his first notable experiments leading up to the antiseptic doctrines on open fractures, using first pure carbolic acid, later recommending sublimate solution, because of its greater power and lower price. The foundation stone of Listerism was, that inflammatory action, septic infection, always depended on extraneous sources, was of atmospheric origin.

There were a few who hesitated to accept this view, or believe that any description of chemical solution of sufficient potency to destroy pathogenic germs could be tolerated by the nude fleshy elements, or by the bone itself. The first set-back that orthodox antiseptics sustained was when they were set aside as dangerous irritants in serous cavities. It was my own misfortune to have lost nearly every patient on whom I employed the bichloride solution in operations entailing the exposure of the brain substance. Finally it was found that equally effective as a prophylactic agent against inflammation after open fractures, were reduced fluids, and hence the assertion of Prof. John Chiene, of Edinburgh, that "as the antiseptic solutions became weaker the argument for their employment became stronger."

Bon Fleuer, of Chicago, in a recent able contribution, speaks in high terms of "innocuous antiseptic substances" as boracic acid, as a dusting powder in bad fractures, not amputations.

This was the substance which our government's investigation into the "embalmed beef" charges revealed was the material employed to preserve fresh meat.

And now, it might as well be confessed, that no known agent will prevent inflammatory changes after the crushing of a limb, and in fact that these changes are indispensable in repair; but we have been able to eliminate the introduction of pathogenic bacteria, not by chemical antidotes, but by severe cleanliness, not perfunctory but radical and thorough through the free use of pure water, through sterilization, and through porous absorbent dressings.

Nevertheless in infected inflammations, so to speak, antisepsis, as taught by the illustrious Lister, must constitute our sheet anchor in combating the advances of local destructive changes.

Drainage and Dry Dressings.

Indiscriminate or injudicious drainage provided a superb portal for atmospheric infection when the tube was employed. This has been sent to Limbo, and now only in suppurative inflammation or suspected hemorrhage is tubular drainage employed.

Constitutional treatment and internal medication always exercise an important influence in all serious osseous injuries accompanied by severe grade of inflammation; without proper attention to these the most skilful attention to local conditions will count for nothing.

ON SOME IMPORTANT POINTS REGARDING PERFECTION OF ASEPSIS.[1]

By CARL BECK, M.D., New York.

The best proof that the treatment of a given disease is imperfect is furnished by the large number of different drugs recommended in that treatment. The prevention of sepsis is by no means an exception to the rule.

The number of powerful drugs advertised as reliable germ-killers is legion. The description of different protective methods, all more or less ingeniously devised, would fill a small library. Some of these devices furnish most brilliant testimony to the unselfish, even the martyr mood of their inventors, and are indeed so radical that, if they were carried out to their final consequences, not only the bacteria adhering to the surgeon would be entirely destroyed, but of the surgeon himself hardly anything more than the bones would be left.

The factors which may interfere with asepsis are the instruments, the dressing and suture material on the one hand, and on the other the atmosphere and the skin of the patient and of the surgeon's hands. In reference to the first factors it can safely be maintained that ideal asepsis is now an established fact. All objects which stand boiling well can indisputably be made sterile. This also applies to the much-disputed question of catgut, since Hofmeister has shown us by the formalin treatment how to boil this material without impairing its tensile strength.

It is, of course, to be presumed that the sterilization of the material in question is supervised by the surgeon himself. The process of sterilization must, in other words, go on in the operating-room, where the sterilizers must be kept. There the towels, dressings, the suture material, etc., must be taken from the sterilizer and put directly upon the instrument-table or the body of the patient. This naturally causes trouble for the surgeon, but it is an absolute necessity, in view of that fatal human characteristic—forgetfulness.

---

[1] Read at the meeting of the Medical Society of the County of New York, September 25, 1899.

The second factor, the atmospheric, seemed to have been settled by the classical experiments of Schimmelbusch, Petri, and Cleves-Symmer. But in consequence of Fluegge's investigations[2] this question has been revived recently, and it seems to have disturbed the surgical mind unnecessarily. Theoretically the possibility of atmospheric infection cannot be disputed. But it hardly is attainable in practice. The atmosphere, it is true, contains an enormous number of bacteria, but these being innocent mould, yeast, and fission fungi, they are fortunately non-pathogenic for the human race. Bacteria, which are pathogenic for man, are present in the atmosphere only under abnormal conditions, as, for example, when they are stirred up from their natural habitat, the earth's surface or the dust of the walls, the floor, the tables, etc. The properties of the atmosphere are, in fact, injurious to pathogenic bacteria in every respect. The atmosphere, if exceptionally visited by a vagabond pathogenic bacterium, can be only a temporary and most uncongenial halting-place for it, in which it will soon be destroyed. It is a most fortunate feature of the pathogenic bacteria, especially the pus-producing variety, that they have a marked tendency to settle. Wherever they settle they use to adhere, and if they are not provoked, so to say, by being stirred up, they cannot come into contact with a wound.

According to Stern's experiments heavy bacteria settle to the ground within the course of an hour and a half, while the lighter ones require about an hour longer.

From these facts we learn that the bacteria-containing dust in a room should not be stirred up by cleaning and sweeping a few hours before an operation is to take place there. As moisture precipitates dust, it is advisable to saturate the air in the operating-room at least during two hours before the operation. This can be done by filling the air with spray or with steam from a kettle. The windows should also be kept closed, especially if there is a current of wind directed toward the windows.

But another possible source of infection propagated by the atmosphere deserves attention. The air expired by the healthy, according to Tyndall, does not contain bacteria, although the cavity of the mouth is a well-known gathering-place for all kinds of pathogenic as well as non-pathogenic bacteria. Staphylococcus and streptococcus are nearly always found. It has, however, been proven by bacteriological test that in healthy persons the virulence of these bacteria is very slight. Clinical observation is in accord with this. But if the surgeon suffers from tonsillitis or even from a rhinitis, the number as well as the virulence of his intra-oral bacteria is remarkably increased. If the sick surgeon talks and coughs a great deal while bent over the wound, there is a possibility of carrying some of these bacteria into it, especially in an operation of long duration. The remedy is simple and proves the wisdom of the old saying, "Speech is silver and silence is gold."

---

[2] Fluegge: Zeitschrift für Hygiene, 1897, Bd. 25.

The assistants in the operating-room must be so well drilled that they understand a twinkle. Most manipulations can be carried out as by an automatic apparatus, without the need of saying one word. Still, if the surgeon is very scrupulous, he would best stop performing important operations until his recovery from the ailments I have mentioned.

Easy as the maintenance of asepsis is in regard to the atmosphere and to all objects which stand boiling, so is it difficult in regard to the skin of the patient and the hands of the surgeon. Skin-bacteria are the stumbling-block in the way of perfect asepsis. The undeniable fact remains, that their total destruction or removal is practically impossible.

The surface of the human body is impregnated with many different bacterial species. Some of them adhere to the skin-surface, some are embedded in the dried cells of the epidermis. They are all accessible to sterilization. They do not necessarily need destruction, but removal. This can be done by simple mechanical means, viz., scrubbing with soap and water. It is made so much the easier by preliminary procedures—viz., whenever possible the patient is given a warm bath twenty-four hours before operation, the field of operation being scrubbed with green soap and shaved while the patient is in the bath. Then a poultice of ordinary green soap is applied to the skin until shortly before the operation. Thus thorough permeation of the epidermis, the dried cells of which are, in fact, macerated by this procedure, is obtained. Areas like the perineum, the scrotal and inguinal region, which are particularly rich in glands, must be scrubbed with especial care. Before the operation the skin is scrubbed energetically with linen compresses, which are dipped into hard fluid soap. This hard soap consists of green soap mixed with soft sand (Stuttgart sand). The scrubbing process consumes about two minutes' time, and goes on while a stream of very warm water constantly flows over the surface to be sterilized. Then thin green soap is used in the same manner and for the same length of time. Particular attention is given to the folds and creases of the skin. Now the skin is dried with an aseptic towel and rubbed for one minute with a gauze compress which is saturated with fifty-per-cent. alcohol. The alcohol is not regarded as a disinfectant in the proper sense, but it is mainly used for the purpose of dissolving the fat of the skin, which is a most congenial resting-place for bacteria. By dissolving their shelter the bacteria are naturally removed.

It is self-understood that the means with which asepsis should be attained must be aseptic. This refers particularly to the water used for washing and the soap, which must have been prepared by the boiling-process. If brushes are used, special care has to be taken, as they can only with difficulty be rendered aseptic, thorough cleaning impairing their usefulness.

Whether after these procedures washing with bi-chloride of mercury or lysol or similar disinfectants is still needed is open to discussion. It will certainly do no harm.

There are other similar methods of rendering the surface of the skin sterile. If they are thoroughly mastered and carried out minutely they may be employed just as well. But the trouble is that underneath the skin surface a number of bacteria are sheltered by the glands of the skin, the secretions of which offer a favorable soil for their development; and these are not accessible to any disinfection or removal. Hence other means have to be chosen to prevent their faculty of infection. And in fact they will do little harm if cared for properly.

It is evident that in incising the skin the knife dissects a number of glands and thereby exposes the bacteria contained by these glands. This undeniable fact fully explains not only the so-called suppuration of the stitch-canals, many cases of so-called late infection, and the bad reputation of the catgut, but also most of the numerous "incomprehensible" infections which develop under the supervision of the "extremely careful aseptic surgeon." Here is also the explanation of the suppuration occurring "in spite of the most minute aseptic precautions," which not only astonished many an experimenter in his laboratory, but also made him set up new surgical doctrines.

I may take this opportunity to state that bacteriological tests of aseptic methods, gained on artificial soil, cannot be applied to biological processes, the living cell reacting against bacteria differently from gelatin, agar, or serum.

That the bacteria thus set free by the skin incision find the most liberal opportunities to come into contact with the deeper regions of the wound need not be emphasized. Still, so far as my knowledge goes, there are no systematic precautions taken or advised in this direction. If a general cannot fight the enemy successfully in the open battle-field, he tries to starve him out, or he may eventually overreach or circumvent him. And the deep-skin bacteria can also be circumvented.

It seems to me that in the fierce efforts to destroy bacteria, this very simple point has been overlooked. Everywhere the old Catonic memento, "Ceterum censeo," is perceived. It may be said that the appeal in reference to bacteria, "Non ante vereri desinam, quam excisa esse cognovero," resounds from all surgical clinics. But it is invariably the "excidere" or "delere," where the searchers for improved aseptic methods get stuck fast.

Let us consider now that the dissecting-knife coming into intimate contact with these deep-skin bacteria, generally represented by the staphylococcus species, must necessarily be regarded as infected. The hands of the surgeon fall under the same considerations. This indicates two necessities: in the first place the change of the infected knife, and secondly the redisinfection of the surgeon's hands. The latter procedure may become unnecessary if gloves are worn by the surgeon while the skin is being incised.

One possibility, inoculation of the subcutaneous strata with the knife, however, remains. It cannot be obviated entirely, but can be reduced to a minimum by slowly and carefully incising the integuments alone as far as possible.

Now, as to the exposed skin bacteria, which cannot be destroyed or removed, how simple is it to set them hors de combat by simple protection! Sterile napkins are fastened to the subcutaneous tissues with miniature forceps, such as devised by me, so that the skin-margins are so well covered by them that they do not come into view during all the subsequent manipulations, which are done then on an absolutely sterile field.

After the operation is completed the margins should be united by the subcutaneous method. If there is an absolute necessity for relaxation sutures they should be applied through the skin, but about three-quarters of an inch distant from the wound-margin, so that there is no direct contact with the wound-line. For such sutures, however, iodoform silk should be chosen. The same principle of protection should under proper modifications be employed in the opening of deep-seated abscesses. This principle was emphasized by me before in connection with the operation for pyothorax, in a paper in 1887, read before the German Medical Society of this city. Then I had tried to protect the fresh wound-margins with iodoform-ether or collodion, before I had opened the pleural cavity, in order to prevent infection from the outflowing pus. Very little attention is paid to this point, as is evident from the custom of incising abscesses, particularly appendical pus-accumulations, without regarding the incision surface at all. And what holds good for the integument applies even more to the mucous membrane. One need only consider the still existing danger of infection in intra-urethral operations. No wonder, because it is simply impossible to sterilize the urethra. It is true, sterilization of the urethra is spoken of a great deal, but practically nothing more than the desire for disinfection has been reached.

Once in a while also the so-called disposition to infection is spoken of. There is something in the theory, but only in a modified way. What favorable conditions are, for instance, offered by the skin of a workingman! And still under the most aggravating circumstances infection is but seldom found among this class in general, while among the so-called better classes the most virulent forms of infection are observed sometimes after a slight abrasion of the skin. This undeniable fact cannot be explained simply by the difference of bacterial species or the degree of virulence. The explanation must be founded on biological grounds. It seems that the plebeian cell in the strongly developed fist of a laborer resists by virtue of its greater vitality the fiercest enemy of mankind more energetically than the aristocratic one in the little-exercised hand of a man of leisure. On the other hand there are a few members of the laboring class who show a most striking tendency for virulent infections, a fact which can be explained by the peculiar action of chemical influences. It certainly makes some difference whether bacteria are introduced into the cell in a pure state or whether they are suspended in a greasy vehicle. The cell which is able to defend itself against the naked bacterium, so to say, may be powerless against one suspended in dirty machine oil.

The principles of sterilization of the surgeon's hands are practically the same as those governing sterilization of the skin of the patient. The only essential difference is, that the surgeon's hands do not need to be incised, wherefore the deep bacteria of the skin of his hand are not exposed, provided that there are no forcible efforts made to dislodge them and squeeze them out, so to say. This would indeed be provoked only by brutal manipulations on the part of the surgeon.

I have repeatedly seen surgeons who had taken minute care in their aseptic preparations wallow round the intestine on the abdominal skin and its wound margins in the roughest manner, while manipulating it after it was taken from the abdomen for inspection. It speaks highly for the natural powers of defence of the human body, that in spite of such manipulations infection does not take place in every such instance.

The same modus operandi holds good for the sterilization of the surgeon's hands, minus the preliminary preparations. The length of time necessary for the scrubbing of the surgeon's hands may vary according to whether the surgeon had come in contact with septic cases shortly before sterilization or whether he was positive that he had remained clean for at least the last twenty-four hours.

Furthermore the most particular care must be given to the subungual space. Wicked tongues remark of certain physicians that they carry graveyards underneath their finger nails. To clean the subungual space a Braatz's nail-cleaner is advisable. The nails must be cut short and even with scissors, not with a file. The space is then scrubbed with the rough soap first and then with the alcohol-water.

It hardly needs mentioning that the surgeon should wash himself frequently like other decent people, whether he do an operation just at the time or not. In order to protect himself as much as possible he should wear rubber gloves when coming in contact with notorious bacterial shelters like the rectum, or when examining septic cases. He should also wash with especial care after an operation.

All these principles also hold good in the question of infection in internal diseases. The clothing and body surface of a man who is surgically clean will offer a poor soil for the development of any carrier of infection. How much simple cleanliness alone can do is shown by the marvelous results of Lawson Tait.

To reduce the possibility, however, of infection communicated from deep-skin bacterial, gloves are advisable. Their use was highly recommended by me as early as in March, 1895, in my manual on "The Theory and Technique of Surgical Asepsis" (Saunders Philadelphia), page 94. It is true that the gloves sometimes interfere with the technique of a delicate operations; sometimes, however, they permit of easier handling, as for instance intestinal work. Cotton gloves offer no insurance against the action of bacteria, but they act as a kind of filter bag, or as a bacteria trap, in which bacteria are not killed, but arrested. When they are left off it must be remembered that the hands of the surgeon should come into contact with the wounded area as little as possible. Most manipulation can and must be done with instruments, which are always indisputably sterile after being boiled. So, for instance, a needle holder should be used while sewing, instead of taking the needle in the hand; thumb-forceps should be used for holding tissues instead of securing them with the fingers.

Erratic bacteria, which are not pressed into the wound, may perish, while in the midst of heaps of crushed cells they may develop in number and virulence. Thus may be explained why some surgeons, who perform the dreaded operation of wiring patellar fracture without touching the wound surfaces with anything but instruments, show splendid results, while the experience of others has been so sad that they have given up the operation on account of the "exceptionally great danger of infection."

These considerations bring us near another most delicate question, namely, the surgeon's manual dexterity. Since the advent of the aseptic era it seems to be supposed by many that this has become an unnecessary accomplishment. Under the auspices of asepsis countless technical sins are committed with a light animus. Some are under the impression, for instance, that if they only stick to the letter of aseptic rules, they do not need to care for a minute approximation, as, for instance, of the gut after resection. But in the event of the slightest diastasis the most thorough aseptic precautions prove to be valueless in such a case, and on the other hand the invasion of a few bacteria might have done little harm, if the approximation was done with great technical skill. How else could the miraculous results of some surgeons of the pre-antiseptic times be explained? I need only refer to my distinguished teacher Bernhard von Langenbeck, the results of whose plastic operations astonished the world. And his classic rules for plastic operations were outlined long before the days of antisepsis.

Whoever saw von Langenbeck operate must have had the impression that he was an aristocrat in the best sense of the word. He had a most pronounced sense for natural cleanliness. It was not customary at his clinic to wear sterile gowns before the introduction of antiseptic rules, but the students wondered why the master always wore a long, peculiarly made Prince Albert coat, which fitted highly over the neck, while operating. This coat was always cleaned very thoroughly, sometimes to the disappointment of the operating nurse. There was a great contrast to the non-æsthetic customs at other clinics of the same period. The hands were frequently washed and the instruments, sponges, and the ligature material were kept extremely clean. Von Langenbeck''s technique was that of an artist. His work was as delicate as a watchmaker's. His anatomical knowledge enabled him to make his skin incision in conformity with the deep seat of the lesion which indicated the operation. Naturally he could also carry out his steps rapidly. Thus by the short duration of his operation he exposed his patient to a smaller risk of infection. His gentle handling of the tissues in general, his aversion against blunt operating, his predilection for sharp and clean instruments, were all points which counterbalanced to a certain degree the pre-antiseptic shortcomings. Such accomplishments should by no means be regarded as unimportant in this modern era. The surgeons should strive zealously to come as near to such perfection as possible.

Thus we can see that the success of aseptic surgery does not depend upon a few principles, but that it is the happy combination of scientific knowledge, conscience, and manual skill, which makes the surgical master, who must thoroughly understand and regulate the thousandfold different wheels of that wonderful organic-clockwork—man.

If we translate our considerations now into practice, the following maxims will result: (1) The superficial surface of the skin of the patient and of the surgeon's hands is sterilized after the principles set forth above. The atmosphere being innocuous, all inorganic material being made aseptic by boiling, the skin surface being asepticized, and the skin glands which contain bacteria being hors de combat, it becomes evident that the only possible source of infection remaining would be the rough manipulations on the part of the surgeon or his assistants.

(2) Aseptic gloves are woven by the operating surgeon at least during the skin incision. The assistant who passes the instruments and the one who attends to the wound itself wear gloves throughout the whole operation.

(3) After incision the wound margins of the skin are covered with sterile napkins, which are fastened to the wound surface underneath the skin margins with miniature forceps, so that the skin wound is not touched at all during the subsequent manipulations.

(4) The knife used for the skin incision must not be used for further incisions. The operation should be performed as rapidly as possible.

(5) For uniting the wound margins of the skin the subcutaneous method should be preferred.

(6) Forcible manipulations, especially blunt operating, should be avoided. Every bleeding spot must be attended thoroughly.

(7) The surgeon and assistants wear sterilized suits or gowns. Their heads must be covered with sterilized caps, because in bending over the field of operation it often happens that the heads of the surgeon and his assistant come in contact, whereby infectious material might be introduced into the wound.

(8) Long beards are entirely unsurgical.

(9) If a surgeon should suffer from rhinitis, tonsillitis, etc., he should use the most minute local precautions, or would better omit operating until recovery. It is self-understood that a surgeon should regard it as a crime to operate so long as he suffers even from a slight furuncle on his hand.

With the expenditure of a little more time and trouble the same principles can be carried through in private practice also.—*Medical Record*.

THE HOME TREATMENT OF CONSUMPTION.*

By WILLIAM OSLER, M.D.,

Professor of Medicine, Johns Hopkins University Baltimore.

In the city, from the country or from small towns, I not infrequently see persons with pulmonary tuberculosis whose circumstances are such that change of climate or life in a sanitarium is out of the question; and when we reflect for a moment on the enormous number of cases of phthisis and the trifling accommodation offered in sanitaria, the practical problem which confronts us is, how best to treat the 95 per cent. of cases necessarily confined to their homes. Cannot these poor victims reap some benefit from the recent experience of the profession?

---

*Read at the semi-annual meeting of the Medical and Chirurgical Faculty of Maryland, at Westminster, Nov. 14, 1899.

The usual surroundings of a consumptive are only too well known to all of us. In a majority of cases the treatment is desultory, unsystematic and directed to symptoms alone. It is not too sweeping an assertion to say that of the 8,000 or 10,000 cases of consumption in the city of Baltimore to-day, few live under a definite régime. Last spring I saw in rapid succession two cases which impressed upon me forcibly the familiar fact that our theoretical knowledge of this disease has, as is so often the case, not reached a practical working basis. In a small house in South Baltimore I saw a young man, aged eighteen (one of five children), who had had tuberculosis for at least nine months. Nothing could have been more unfavorable than his surroundings, though the people were of the mechanic class, and of good intelligence. The room was stuffy, ill-ventilated, with both windows closely shut, and the temperature of the room, heated by a small stove, was nearly 80°. He had been in bed for at least three months, with much cough and a great deal of expectoration, some of which was visible on the floor, as it did not always reach the spittoon. He had high fever, loss of appetite, and was being fed on panopeptone and beef extracts. The room had a good exposure, and I suggested to the young man to have the bed moved to the window, to be well covered up, and to rest in the sunshine during part of every day. The reply was that it would kill him, and I could see by the mother's looks that she was of the same opinion. The doctor, too, I am afraid, regarded me as a fanatic. In the same week I saw a similar picture in a different setting, a young girl, who had been in bed for many weeks, with high, irregular fever and a rapidly-progressing disease. I could see that the suggestion of an open-air course of treatment was extremely distasteful, but she was induced to go to the Adirondacks, where she has done very well.

Arrest or cure of tuberculosis is a question entirely of nutrition, and the essential factor is so to improve the resisting forces of the body that the bacilli cannot make further progress, but are so hemmed in that they are either prevented effectually from breaking through the entrenchments, or, in rare cases, they are forced to capitulate and are put to the sword. Of the measures by which the general nutrition of the body may be encouraged and improved, the first and most important is:

Fresh Air.—For more than two centuries the clearer-headed members of the profession have known that an open-air life sometimes cures a case of phthisis. One of the earliest and most interesting cases of this kind is reported by John Locke, the philosopher, in his "Anecdota Sydenhamiana." "Mr. Lawrence, Dr. Sydenham's Nephew after a fever fell into a Cough, & other signs of an incipient Phthisis, (the Morbific matter being violently translated in upon his Lungs) and at length the Diarrhœa colliquativa came on: then ye Dr. sent him into ye Country on Horseback, (tho' he was so weak yt he could hardly walk) & ordered him to ride 6 or 7 miles ye first day, (wch he did) and to encrease dayly his Iourney as he shd be able, untill he had rid 150 miles: When he had travelld half ye way his Diarrhœa stopt, & at last he came to ye end of his Iourney, &

was pretty well (at least somewhat better) & had a good appetite; but when he had staid at his Sister's house some 4 or 5 days his Diarrhœa came on again; the Dr. had ordered him not to stay above 2 days at most; for iff they stay before they are recovered this spoils all again; & therefore he betook himself to his riding again, and in 4 days came up to London perfectly cur'd. The same course hath ye Dr put others upon, especially in Pulmonick Diseases, & wth ye like Success when all things elce had faild him; & he was not ashamed to own yt he was fain to borrow a cure from this way now & then when he found himself puzzled with some lingering Distemper not reducible to a common & known (sic) Disease."

This reminds one of Dr. H. I. Bowditch's description of the ride which did him so much good when as a young man he was supposed to have lung trouble.

The quality of the fresh air in our large cities may not be very good, but it is the best a large proportion of our patients can possibly get to breathe, and it is a great deal better than the atmosphere of the overheated, ill-ventilated rooms in which a majority of them live.

I give the following directions: Take the almanac and count off the hours of sunshine. In winter cut off two hours in the morning and an hour in the evening, and for the rest of the day the patient is to be out of doors. If there is no possible arrangement for life out of doors, the patient is to be in a room with a southern exposure with the windows wide open. The bed is to be moved into the sunshine. If there is a balcony or a veranda with a good outlook towards the south, it should be arranged for the patient; if not, a sheltered protection can be put up in the yard at a very moderate cost. On a well-padded lounge, covered with a couple of thick blankets, well wrapped up, the patient sits or reclines all day, coming in only to attend to the calls of nature. Only on blustering, stormy or very rainy days is the patient to remain in the house. No degree of cold is a contraindication. This continuous open-air life, at rest, is the most powerful influence we possess to-day against the fever of tuberculosis. It may take a month, it may take two or even three months before the temperature reaches normal, but it has been one of the many valuable lessons which we have learned from Dr. Trudeau, that in the fever of consumption the patient should not only be out of doors, but at rest, taking no exercise. The bedroom of the patient should be thoroughly ventilated, and the patient should be accustomed gradually to sleep with the window open.

Secondly, *Food*.—The stomach controls the situation in pulmonary tuberculosis. In any long series of cases the patients who do well are those who can take plenty of food. An important cause of the lack of appetite and feeble digestion is the persistent fever, and we often find that as the temperature falls the appetite improves. It is easy to lay down rules; very hard to carry them out. Each case must be dealt with separately, but as large a quantity of food as possible should be given. Overfeeding or stuffing, when possible, should be practised, and the patient should be encouraged to pay as little attention to his subjective gastric sensations as possible. We rarely can carry out the autocratic, cast-iron method followed at Nordrach, which insists that a patient who has vomited a meal shall, nolens volens, eat another very shortly of the same character. For some time I have been urging the patients to accustom themselves to taking raw eggs, beginning with one three times a day, and increasing one a week until they took, if possible, twenty or twenty-four daily. For the hyperalimentation this is probably the simplest and most satisfactory diet. It has been carried out with marked success by Dr. Ely of Rochester, who literally prescribes eggs by the dozen. Broken into the egg-cup, sprinkled with a little pepper and salt, the egg can be readily swallowed without breaking the yolk. It is most important to get the patient accustomed to taking the natural foods. Milk and cream and butter, meat and eggs and oysters should constitute the main part of the diet.

The medicinal treatment of cases may be divided into—first, the use of stomachics, bitter tonics and certain digestives; secondly, remedies such as codliver oil, hypophosphites and creosote, the benefits of which are chiefly in promoting general nutrition, and, thirdly, remedies for the relief of certain symptoms, as cough, pain, night sweats, etc.

In December last a young woman came to me from one of the towns in the State with well-marked tuberculosis. Her grandmother and two of her father's brothers had died of consumption. She had a cough off and on for three years, and for more than a year she had a great deal of fever, had lost very much in weight and had had profuse night sweats. She never had had any vomiting. When I saw her she had high fever (temperature 103°), and there were signs of extensive disease at the right apex—flattening dullness on percussion with resonant rales as low as the fourth rib. There were signs of involvement of the right apex behind, and there were a few crackling rales at the apex of the lower lobe on the left side behind. She was short of breath, and looked thin and pale. Her weight was 109 pounds. I gave her directions such as I have indicated, and she has given me a brief statement in her own words of her progress in the eleven months. She writes as follows (November 10): "When I begun treatment the first day I sat out was December 11, 1898; don't know just how cold it was, but could see the river from our porch and they were skating. In winter usually had breakfast about 8 and went outdoors about 9. When I begun was not well enough to walk much, was so short of breath; after sitting out for some weeks would walk up and down porch an hour before sitting down. I spent a good deal of my time reading; became so interested in my book at times forgot how cold it was. The first two weeks I took three eggs a day, one at 10 A. M., another at 3 and another before going to bed; then six a day, two at a time, and continued to increase till I got up to fifteen a day; continued that number for two months or more, then took twelve a day for three months, then nine. For breakfast I had oatmeal and cream and toast, or small piece of beefsteak and coffee; dinner at 12, drank one glass of milk and ate anything that was on the table in the line of meats or vegetables (provided I liked them); seldom if ever eat desserts. Went out immediately after dinner and remained there until sundown; more eggs at 3 and supper at 6; another glass of milk, and with that a small piece of meat, as a rule, and bread. Eggs again at 9, and go to bed between 9 and 10. Was sitting out one day when the thermometer registered 10° below zero. When it felt like snow or rain remained indoors. I kept this up till the weather was warm and then went driving, took eggs along and stayed out in country till dinner time; drove out again late in the evening, and after my return home would sit out till after 10 o'clock. When I begun treatment had bad cough, expectorated a great deal and no appetite. The cough begun to get better, and after about four months I coughed very little; now, so rarely and expectorate so very seldom that it is hardly worth mentioning. When I consulted you last December weighed 109 pounds; now tip the scales at 132 pounds. I have improved steadily and gained in flesh gradually from the above date."

This very practical story illustrates what could be done by many patients. Last spring I happened to be in the town in which this girl lived, and I fortunately thought of her and paid her a visit. She lived in a small two-story house, with a narrow balcony on the first story behind, and here at half-past eleven one morning I found her carefully wrapped up. She looked a different girl, and the report indicates that she has done remarkably well. At the time of my visit she was without fever, but there were still numerous moist rales at the right apex.

Since writing the above I have seen this patient (December 1), who looks remarkably well, has a good color, is free from fever, has no cough, no expectoration and weighs 133 pounds. Luckily I dictated a note on the condition of the lung at the time of her first visit, otherwise I should not have believed the extent of the change. The resonance is still impaired, the flattening is marked beneath the right clavicle, the breath sounds are harsh, the expiration prolonged, but there are only a few dry crackling rales on coughing or on deep breathing. There were no signs at the apex of the lower lobe of the left lung behind.

Two additional points of interest may be mentioned. She has not had a doctor, and she has not had a dose of medicine except an occasional dose of paregoric for the cough. She took creosote for a short time, but afterwards gave it up. Shortly before she visited me her physician died, and I did not know, until my visit to her, that she had not been under any professional care. She could not have done better had she been at the Adirondacks under Dr. Trudeau.

A rigid regimen, a life of rules and regulations, a dominant will on the part of the doctor, willing obedience on the part of the patient and friends—these, with the conditions we have discussed, are necessary in the successful treatment of pulmonary tuberculosis.—*Maryland Medical Journal.*

SOME OBSERVATIONS ON THE MORE COMMON FORMS OF SEXUAL IMPOTENCE.*

By ERNEST DWIGHT CHIPMAN, M.D., Waterbury, Conn.

The subject to which I would call your attention is one which is scarcely touched upon in the colleges, rarely treated in the hospitals, and, so far as my observation has extended, never discussed in the medical journals.

"Supercilious nonchalance" is a terse phrase which has been used to express the attitude of the profession toward that extremely common affection—sexual impotence. From time immemorial such matters seem to have been conceded to the dominion of the charlatan.

We often marvel at the reluctance with which laymen instruct their children in the elements of sexual hygiene, and yet, even while we marvel, we carelessly turn away an impotent patient with a prescription that is "good for neurasthenia," or with a box of aphrodisiac pills. Alas, for that rare jewel consistency!

The temptation in writing upon such a subject is to digress into a consideration of certain sociological problems and to linger over some of the ethical questions which are bound to arise. The safe course in the present discussion appears to lie in the simple proposition that the subject of sexual impotence is worthy of our most intelligent care wholly apart from all questions of morality and entirely regardless of the motive which brings it to us.

Now impotence is a vague term, a word that is used loosely, and one that may have come to possess a double meaning to many of us. The literature abounds in definitions, few simple, many complex. There are two forms of potency—the *potentia coeundi* and the *potentia generandi*. The absence of the former, that is, the inability to perform the sexual act, deals with impotence solely as such, while the lack of the *potentia generandi* plainly signifies sterility and nothing else. Herein lies the distinction between impotence and sterility so often ignored by older writers. One may be sterile and not impotent, although, of course, one who is impotent is necessarily sterile.

Impotence, then, can be simply defined as an inability to perform the sexual act. It may be due either to physical causes, in which case we have the so-called organic variety, or it may be due to mental causes, when we have what is termed the psychical form. There are many classifications which are more elaborate, but these two divisions will comprehend all kinds and all degrees.

Those cases due to physical causes are more likely to be permanent; those resulting from mental influences are often transitory.

Our first duty is naturally the determination of the cause. Obviously there are many physical defects which preclude potency. The long list of congenital malformations and acquired deformities of the genital apparatus which have this effect would fill a volume, and even then be of doubtful utility. For the most part they are so apparent as to cause no difficulty in diagnosis.

---

*Read before the Waterbury Medical Society, October 9, 1899.

There is one class of cases, however, due to physical causes which is of no mean importance, the essential pathology of which consists of an hyperemia with a resulting hyperesthesia of the prostatic urethra. This may be brought about in various ways, chief of which are excesses in masturbation or venery, old posterior urethritis, and even according to some writers, prolonged continuance and ungratified sexual desire.

We note, also, differences in degree. The mildest grade can scarcely be called impotence. It is rather an irritable weakness in which vigorous erections may be present, but in which premature ejaculation takes place. Then there is a grade in which the erections are feeble, or absent, in which ejaculation is deferred and without force. Through the several degrees of intensity we can trace the affection until we meet that pitiful creature, the prematurely old roué, who comes to us realizing that his virility is slipping from him and imploring us for some rejuvenating elixir.

Psychical impotence is something much less tangible. We rely for our diagnosis upon the negative results of our examination of the genital organs, or, in other words, upon the elimination, one by one, of the possible physical causes. We also note the condition of the general nervous system.

The majority of these psychical patients are hypochondriacs of the most pronounced type. They have nearly all read over and over again the highly colored pamphlets from various "medical institutes," and "experienced old doctors" who guarantee to restore their "lost manhood" with two or three boxes of their famous pills at the nominal price of five dollars per box.

But I think as a matter of fact there are comparatively few cases of pure psychical impotence. Nearly always there will be found some definite pathological condition at bottom, although even the slightest of these the patient will often brood over and exaggerate until a well defined psychical element is introduced to complicate the case still further.

So we come to have what might be called a mixed form; and I believe the greater part of the cases we meet belong under this head.

The pathology of psychical impotence is the pathology of neurasthenia. The family history often shows a neuropathic predisposition, the patient himself a neurotic temperament. Sometimes erections are present, sometimes absent; very often the subject is capable with one partner and helpless with another. Various emotions as grief, fear, anxiety, etc., often render him temporarily impotent.

The first requisite in the successful treatment of any form of impotence is to gain the confidence of the patient. Most patients are skeptical by reason of many failures. Careful sexual hygiene, nourishing but not stimulating food, judicious bathing, particularly in salt water, and various amusements which tend to divert the patient's mind from his troubles, are to be recommended in all cases.

It would be quite beyond the range of this paper to consider in detail the many drugs which are lauded in this affection. Their very number is the most powerful argument against the efficacy of any. Drugs are useful adjuvants in nearly all cases, and are to be relied upon only in very few. Probably no better combination can be found than that recommended by White, which consists of tincture of nux vomica twenty drops, dilute phosphoric acid, one drachm, and Huxam's tincture, two drachms, to be taken before each meal. Damiana has been greatly praised, but from my observation in the few cases in which I have used it, I believe its value has been overrated.

Electricity is said to be of special value in those cases attended with feeble erections, the faradic current being indicated.

It is in those cases in which there is hyperemia and hyperesthesia of the deep urethra that the results of treatment are especially gratifying. Here the treatment consists of the passage of cold sounds, the use of the psychrophor, electricity, or the application of caustics.

With the last two methods I have had no experience. During the past year I have treated six cases with cold sounds and the psychrophor, and in every instance the benefit has been marked. Two of these cases are especially worthy of brief outline.

In the first case the patient, forty-five years of age, had been impotent for five years. There were occasional feeble erections, but when coitus was attempted ejaculation followed at once. Although he had tried many nostrums and had read much yellow medical literature, he apparently retained his mental equilibrium. There was no history of venereal disease, but patient admitted excessive masturbation in youth and sexual excesses in later years. The external examination of the genitals showed nothing abnormal except an unduly flabby conditon of the penis. The passage of the sound revealed exquisite tenderness in prostatic urethra.

The treatment lasted for three months. At least three times a week the psychrophor of Winternitz, also called the cooling sound, was passed. Through this, water at from 50° to 40° F. was allowed to run. The first treatment lasted five minutes, and the time was progressively increased until each treatment lasted half an hour. Occasionally a full sized sound was substituted. The patient also directed a spray of cold water against external genitals and perineum every morning. As an adjuvant to the mechanical treatment he was given the combination of nux vomica, phosphoric acid and Huxam's tincture already mentioned. In two weeks the erections showed improvement. Instead of getting up two or three times in the night to urinate he found that once was sufficient. I think this latter is an interesting fact. In two of my cases the men were 45 years of age or older; both had enlarged prostates and were obliged to get up in the night to urinate. Both were markedly improved by treatment which was directed toward the relief of the congestion and hypersensitiveness in the posterior urethra. And it seems as if a well marked analogy might be shown to exist between those things which make for impotence and those which cause prostatic troubles in men passing middle age.

This is something of a digression from the patient whom we left a moment ago improved with two weeks' treatment. There is little more to add. The improvement was progressive. At the end of three months he seldom found it necessary to urinate during the night. He was able, moreover, to have very satisfactory intercourse, although he had not regained the virility of youth.

The other case worth special notice is that of a young man aged 23 years. He came to me three weeks before his marriage and declared that he was suffering from "lost manhood." He was a pronounced hypochondriac, bewailed his excessive masturbation, and asked advice as to whether or not he should withdraw from his matrimonial venture before it was too late. This was a question which I hesitated to answer. Although apparently it was a clear psychical case, inquiry elicited a history of an old neglected gonorrhœa, and examination showed extreme hyperesthesia in deep urethra. There was no stricture. Whatever my inward doubts I told this patient that he need have no fears as to his recovery. I believe I obtained his complete confidence. The results justified the prognosis. In his case the psychrophor was used daily. After four days slight improvement was noticed, which proved continuous. In less than two weeks he had vigorous erections and desire, whereas before coming for treatment both were absent. At the end of three weeks he was married; and later he told me that he had fulfilled his marital obligations to the satisfaction of all concerned. An interesting side-light is thrown upon this case in the fact that the severe backaches which had long annoyed him were completely cured by a single dry cupping. This case clearly illustrates what has already been referred to as a mixed form.

At this point a short description of the psychrophor might not be amiss. The psychrophor, or cooling sound, is a closed metallic catheter constructed in such a manner as to provide both for the inflow and outflow of water in a continuous stream. The inflow can conveniently run through a rubber tube from a vessel slightly elevated, and the outflow can be conducted through another rubber tube to a vessel on the floor. Its beneficial action is undoubtedly twofold. The influence of the cold combats the congestion, while the mechanical effect of the instrument diminishes the nervous sensibility of that very susceptible portion of the urethra out of which go the various reflexes. In virtue of this latter fact a full sized instrument would apparently best serve the purpose, although all that I have seen have been of rather small caliber.

In this affection, as in most others, the keynote to successful treatment is an accurate perception of the exact pathological condition with which we are dealing. From a limited experience I hold the opinion, tentatively, that in a majority of all cases the condition is what I have described as an hyperemia and hyperesthesia of the prostatic urethra; furthermore, that in a large percentage of these cases the prognosis is unqualifiedly good.—*Yale Med. Jour.*

NURSING IN THE LYING-IN PERIOD.

By GUSTAV KOLISCHER, M.D., Chicago.
Professor of Gynecology and Obstetrics, Chicago Clinical School.

I shall not attempt in this brief paper to give a full description of the rules which should be observed in nursing the puerperium, but will merely call attention to a few points, which if carefully observed will add much to the comfort and safety of the patient.

Ergot is usually administered after confinement to cause firm uterine contraction and to further involution. This it usually accomplishes, but if the effects of this drug are not pronounced within two or three days, it will not act at all, and it frequently produces a marked disturbance of the stomach and of the lower intestinal tract. Under such circumstances its administration by the mouth should be suspended, and it should be given by the rectum. Prompt absorption takes place from the lower bowel, and a flabby, softened uterus becomes hard; after a few injections it resumes its normal shape and the periodical metrorrhagias cease. An aqueous solution of ergot is always employed for this purpose. It is added to a small quantity of glycerin and the whole dissolved in half a glass of lukewarm water. The injections should be made once in twenty-four hours, and the total quantity of fluid employed should be small, to prevent rectal tenesmus.

Micturition is usually watched by the attending physician with too great anxiety. The catheter should be used only if necessary, as it is a not infrequent observation that after it is once employed it cannot be given up for a long time. While we can avoid infection of the bladder in the majority of cases, protracted catheterization carries with it a great many inconveniences and not a few dangers, among which are occasional injuries to the urethra with consequent traumatic urethritis and rare fissures of the neck of the bladder. During delivery a large amount of fluid is lost by perspiration and by hemorrhage; the activities of the kidneys may be further reduced by anæsthetics. Under these circumstances a rapid accumulation is not to be looked for, and usually twelve hours may be allowed to pass before marked accumulation will take place. In the meantime efforts should be made to produce natural micturition—a warm poultice applied to the urethral opening and gentle pressure used to stimulate the organ. Of course, the catheter should be employed if early indications for its use occur.

A not infrequent mistake is a false diagnosis of cystitis during the puerperium; this leads to local treatment of the bladder, which is unnecessary. It is to be remembered that in difficult and protracted labors, where there is considerable pressure upon this viscus, it is not infrequently mechanically interfered with in its functions. Its mucous membrane is always edematous during labor, and if it sustains some injury, subepithelial hemorrhages may take place which are followed by desquamation of the epithelial lining. These patients complain of a feeling of heaviness and dull pain just above the pubes. The urine is cloudy, due to the large amount of epithelium thrown off. A desquamative catarrh such as is here described usually recovers without local treatment, which is only necessary where the trouble is of a high degree and pain is severe. Such cases are easily relieved by a single injection of iodoform mixed with oil. In preparing the emulsion, the oil should be carefully sterilized and no glycerin should be used, as the latter from its affinity for water will increase the pain. If the usual treatment for cystitis is employed and the bladder is flushed with disinfecting and caustic solutions, we give unnecessary pain and derive no benefit. If carried too far, such treatment may result in ulceration of the lining membrane. Diagnosis of cystitis should never be made without carefully considering all the symptoms; pain and cloudiness of the urine are not sufficient, but the sediment must be examined microscopically. If pus is absent there is no cystitis, but a desquamative catarrh. In obtaining specimens for examination care should be taken that the urine is not mixed with lochial secretion, as the latter commonly contains pus cells. In doubtful cases cystoscopy can be employed, which is done without difficulty on a patient lying in bed. If it is necessary to introduce a catheter, care should be taken to avoid touching the denuded and sensitive trigonum.

The pelvic articulations do not receive their full share of attention. If there is pain in the symphysis or in the sacroiliac articulations, or if there is complaint of permanent pain in the thighs, some distortion of the pelvic articulations should be looked for. In such cases a firm bandage should be applied to the pelvis, which will give comfort, immobolize the joint, and avoid the accumulation of exudate and fibrinous deposits in the joints.

Fissures of the aureola of the nipples will often prove a source of great trouble to the patient and physician; salves and lotions rarely give relief, and unless radical measures are employed infection may take place and an abscess result. The simplest and most certain means of dealing with them is the actual cautery, which produces an eschar of sufficient thickness to protect the underlying tissues and prevent infection. The galvanocautery is preferable to the Paquelin, as the latter frightens the patient and causes pain. The galvanocautery can be placed in position before the current is turned on, and the whole operation is done so quickly that the patient scarcely preceives the slight pain. In cases that will not permit the use of a cautery, the best application is a four-per-cent. chromic acid solution applied with a small brush. By this means a dry eschar is produced.

In the diet of the puerperium the intestinal tract should not be overloaded with food. Eggs are often employed, but patients who suffer from habitual obstipation or flatulence should not be given eggs, as they often cause fermentation in the intestinal tube. In some cases bowel movements are produced with very great difficulty. Cathartics, high rectal injections, and enemas all follow. In these cases the faradic current should be employed, applied in such a way as to simulate the muscular structure of the colon. A roller electrode is the most convenient to use in these cases, and the current should be of moderate intensity. In differentiating between atonic bowel complications and the hysterical ones, we should always examine the abdomen for the hardened nodules, which are tender, and which disappear and again reappear. If present, these clearly point to the neurotic character of the trouble and call for the administration of nervines and antispasmodics.—*Medicine*, January.

FOUR CASES ILLUSTRATING VARIOUS SERIOUS TYPES OF FRACTURE AND TRAUMATIC AMPUTATION.

By THOMAS H. MANLEY, M.D., of New York city.

At the recent meeting of the New York State Association of Railway Surgeons, Dr. Thomas H. Manley presented four highly interesting cases of fracture, of the closed and open variety, which had lately come under his care. Two of the patients were railroad men—a freight conductor and a brakeman.

Multiple Fracture of Arm and Forearm.

Case 1. Patient, 34 years old, was thrown between moving cars and sustained a terrible crush of the left arm, the wheels passing over it between the shoulder and elbow. There was one fracture just below the outer head of the humerus, one in the middle third, attended with extensive shattering, and a fracture through the ulna and radius, just below the elbow-joint.

When brought into Harlem Hospital by the ambulance, although none of the bones were exposed, there was so much shattering, laceration and contusion that at first sight it would seem that a shoulder amputation was inevitable. The whole limb hung like a flail, was cold and pulseless, and below the elbow was everywhere insensible. It was in a state of complete asphyxia, the blood vessels had sustained serious damage, and it was apparent that the nerve trunks did not escape.

Treatment: No description of splinting nor bandaging. The arm was laid on a flat hair pillow, at right angles with the body, covered by warm, moist gauze and supported on either side by hot rubber bags, extending from the shoulder to the finger-tips. At the end of 24 hours there were evidences of returning animation in the fingers; for four days the whole arm was highly tumefied and inflamed.

On the eighth day inflammatory swelling had begun to subside. The whole limb was well padded and encased in plaster-of-paris, the forearm brought to right angles and placed in a position between pronation and supination. All the fragments united completely before the end of the fourth week. The limb was saved.

There now remained osseous fusion between the upper ends of the ulna and radius; there was rigidity at the wrist and elbow, with stiffness of the fingers and muscular atrophy.

(Dr. Manley said that as there now was a full and free circulation he would in the near future perform a secondary osteoplastic operation, liberate the articulations and remove the callus which tied the radius and ulna together, then by massage, baths and electricity, he was confident of securing practically full use of the limb.)

Traumatic Medio-Tarsal Amputation.

Case 2. Brakeman, 29 years old, injured in same freight yards two weeks after first case, in a similar manner. The car wheels passed over and crushed through the right foot, the parts being held together only by the tendons, fascia and torn integuments. The tarsus forward and the meta-tarsal bones were crushed to a pulp.

In accordance with directions in all such cases on entrance, the house surgeon sought out and ligated all the bleeding points, then wrapped all up in embalming dressings and placed the limb on a pillow. The patient had lost much blood and was in marked shock when seen six hours after injury. Patient freely stimulated and complained of pain at site of injury.

The second day temporary dressing removed. Line of demarcation had now formed. The parts in a state of dry gangrene were trimmed away. It was now found that with the sawing away of the projecting ends of the scaphoid and cuboid bones after their periosteum was removed, enough plantar flaps preserved its vitality to cover in the large breach. The tendons of the long digital extensors of the great and lesser toes were drawn down and securely sutured into the remaining periosteum and aponeurosis; the parts closed in without any drainage, except an opening left on either end of the wound. There had been no amputation here, but simply a resection.

Result most gratifying. It required three months before healing was complete. Now he has almost serviceable stumps, well closed in, consisting of the astragalus, os-calcis, and the greater part of the cuboid and scaphoid bones.

He walks, as is seen, without crutches, and is amused when his friends inquire if he has his "artificial foot so soon?"

This is a striking example of the direction modern surgery is taking in these mangling traumatisms, which, in former times, were promptly dealt with by amputation.

Fracture of Ulna with Dislocation of Head of the Radius, Forward and Consecutive, Limitation of Joint Motion and Paralysis.

Case 3. Engineer, 37 years old, injured 24th of November, 1898. Came under care of Dr. Manley five weeks previous to meeting, October 10, 1899. He was injured by the sudden rupture of a main belt, which struck him with terrific force on the outstretched right arm and knocked him down.

When raised up it was found that he was in great shock and had broken his arm. He was at once brought to hospital, coming under the immediate care of one of our most noted surgeons on bone traumatisms. Here he remained six weeks, but returning for treatment for several months. The fracture united with some overriding of the fragments, fusion between the radius and ulna, with consequent total loss of supination and pronation, and with an unreduced head of the radius, rendering free elbow action impossible. But, what was the worst of all, paralysis, wasting and rigidity of the fingers followed.

This was somewhat overcome when he came to Dr. Manley, yet the hand was not of its natural warmth, the fingers were numb and could not be latterly separated. The thumb was stiff and could not be brought to touch the index finger. The forearm could be flexed to about 40 degrees, and the elbow was very painful on any attempt at flexion. He complained of a sensation he said, as though there was a tight band encircling his forearm, and, moreover, there were only certain positions that the arm could be placed in which were comfortable. In a word, he had a crippled, useless limb, and keenly felt the melancholy prospects of the future, as he had been warned that any interference would rather aggravate than help it. His arm had been skiagraphed and showed what anyone could plainly see and feel, that the head of the radius had been thrown over on the coronoid fossa of the ulna. He had been in the hands of the neurologist and exhibited at the Academy of Medicine.

After careful examination and study of the case there were three things plainly apparent: First, that the sad sequelæ of this injury to the limb were not intrinsic to the fracture and dislocation, but the complicating damages to the nerve trunks. Second, there was an unreduced dislocation at the elbow. Third, there was a hyperostosis, malunion and fusion of the ulna and radius at the site of fracture. The patient was a man of good habits and sound health.

Dr. Manley's advice to him was to submit without delay to an osteoplastic operation, which was not attended by any special danger, and offered every prospect of relief of his troublesome symptoms, and in a large measure recovery of the full use of the limb.

Operation and Results: On October 12 he entered Metropolitan Hospital, where the operation was performed the same day. The aim in view was to first cut down on and attempt the reduction of the radial head; if this failed to resect it. Second, to approach the area from its dorsal aspect, expose the connecting band of new bone, remove it and restore the full rotatory action of the radius. Third, to break up all the old intermuscular adhesions at the elbow, the wrist and in the hand and digits.

The first steps, then, involved the production of a double open fracture, with an arthrotomy.

The usual preparation having been made by the first assistant, Dr. Joseph H. Byrne, the operation was begun by first exposing and ligating off the large plexus of venous trunks at the head of the elbow; then the bicipital fascia came into view and was divided across its entire length, immediately under this, splitting through the fibers of the round pronator muscles, lay the head of the radius, covered by the orbicular ligaments.

All efforts at reduction being futile, the radial head was cleft through, close to its tuberosity. It was now easy to force the radius into its normal position.

The head of the radius removed, an examination of the parts was made and the median and musculo-spiral nerves sought for. By following the throb of the brachial artery, it was expected to readily discover the trunk of the median nerve, but nothing like it was found until the incision was carried further up, when it plainly came into view at the point where the radial head had caught it. It was so reduced in thickness that little more than its sheath remained. The musculo-spiral nerve was apparently normal.

The next step was to expose the ulnar over the site of fracture, where the callus had contracted an intimate fusion with the radial shaft. As this was comparatively superficial, it was easily accomplished, and the intervening callus readily removed by the osteotome. In order to prevent a recurrence of osseous fusion a segment of the interosseous membrane was detached, drawn through the interspace and securely transplanted, by firm suture, to the external aponeurotic investment.

This second incision was closed in by two rows of suture—one through the aponeurosis and one through the skin. The operation occupied one hour. The wounds united without infection, and in two weeks patient was able to be up and go out.

The results now, five weeks after operation, are, as seen, more than could be anticipated for so short a time. Practically complete rotatory movement in the forearm is secured, the full and free action of the elbow is restored, normal feeling of the hand has returned and the thumb, with the fingers, moves freely in every direction. The surgery of the peripheral nerves after trauma of bones and articulation is yet practically an unbroken field for the achievement of many surprising results in the future. It will be noted, too, that clinically there is a vast difference between the effects of an open fracture, the result of violence, and one artificially produced.

Altogether, the case illustrates the possibilities of secondary osteoplasty after serious traumatisms of limbs.

Traumatic Neurasthenia After Colles' Fracture.

Case 4. A childless married woman, 48 years old, sustained a Colles' fracture of the left wrist, early in last February.

She went to one of our dispensaries and had the fracture treated. Says she has had pain all the time, without intermission, since the fracture occurred. Came under Dr. Manley's care in September. The usual "silver fork" deformity so often seen after union in these cases was noticeable. Has pain all the way from the shoulder down into the fingers; has lost power of rotation in the wrist.

The arm was refractured by Dr. Manley and readjusted late in September. Union prompt, but patient experienced no relief, and says she is now in greater distress than ever.

Every conceivable palliative measure has been fruitlessly tried, and now it is intended to expose the brachial plexus and try the effect of Hersage on the main nerve trunks.

Dr. Manley said that this last case was a typical one of traumatic neurasthenia—a very deplorable condition, which is not infrequently witnessed in very bad sprains or fractures contiguous with the articulations.

PRESCRIBING ALCOHOL VERSUS OUR OWN INTERESTS.

By FREDERIC C. COLEY, M.D. Durh.

Where well-to-do patients are concerned it is often our duty to recommend entire and permanent abstinence from all stimulants when regard to our own interests would suggest a prescription more in accordance with the patient's tastes and prejudices. But when we have to do with the working classes we shall be very short-sighted if we do not perceive that duty and self-interest more commonly point in the same direction. Let it not be assumed that in what I am stating I suppose a low state of morality in the medical profession. I am merely calling attention to facts which indicate that what is to the advantage of the community in general tends also to the profit of the medical profession in particular.

We have heard much of late about the abuse of hospitals by people resorting to them who are well able to pay for medical treatment. Now the practical question is not, how much does a man earn, but how much has he available for such purposes as paying for medical treatment for himself and family whenever that happens to be required? A lurid light is thrown on this question by the very carefully elaborated statistics of Mr. Rowntree, which show that working-class families spend on an average 6s. a week on alcoholic liquors. If we could take out of the reckoning the many thousands of teetotal families who spend from choice nothing on alcohol and the very poor who from necessity spend very little, the average expediture of those families who indulge freely in alcohol would of course be found to be much more than 6s. a week. Nor is this all. Many employers of labor complain that large numbers of men who make good wages do not make nearly so much as they might, simply because they devote two or three days a week to idle drinking.

Now it is no doubt true that some people who have the money to pay for medical treatment prefer to apply to a hospital from mere stinginess. But it is more to the purpose that working people who waste more than 6s. a week per family cannot do otherwise than depend upon charity for medical treatment, when they require it. So that although a radical change in the habits of these families in regard to drink would not necessarily improve their relations with the medical profession it is impossible for that desirable result to be brought about without it. It follows, therefore, that it is to the interest of the rank and file of the medical profession to encourage the practice of total abstinence with all their might. I am not going to suggest that we should all straightway "sign the pledge" and become members of the British Medical Temperance Association—though we might take more suicidal steps than either of these. But this we can easily do: make it a settled rule of our practice never to prescribe alcohol unless we are convinced that no safer remedy will produce the desired effect, and never to prescribe it at all for trivial ailments. Whenever we believe that alcohol is necessary and no other remedy will serve as well, then it is prudent to avoid the ordinary commercial forms of alcohol and prescribe rectified spirit, to be dispensed in a medicine bottle and flavored as may seem desirable. In this way only can we secure scientific accuracy in the strength and dose of the stimulant, and we materially lessen the danger of the use of the drug being continued after the need for it has ceased. And we should never forget one very strong argument in favor of the course which I am recommending—viz., that the mere presence in the house of any of the ordinary forms of alcohol may be a dangerous temptation to other members of the household beside the patients for whom it was prescribed.

But we need not and ought not to be content with merely avoiding the prescription of alcohol except in extreme conditions, and even then taking special precautions lest our prescription might do harm directly or indirectly. We should take every possible opportunity of using our whole influence to enforce the conviction that the habitual use of alcohol is not only unnecessary but positively unfavorable to health and long life. The statistics of life insurance companies and friendly societies will furnish us with ample justification for taking this position.

It does not admit of doubt that if the whole of the medical profession would act upon the principles just suggested before long some millions of pounds would be diverted from the liquor trade to more desirable channels, and the result would be a great gain to all concerned except the liquor traders. And even they would lose very much less than the community as a whole would gain. For the enormous indirect loss from alcoholism by the ways of sickness, and idleness, and imprisonment, and general inefficiency, brings no gain to anybody. Until this stupendous waste of money and the power to earn money is greatly diminished a very large part of the working classes must be more or less dependent upon charity in times of sickness. And medical charity is the kind which is most readily sought by people who would not think of asking for charity in any other form. Hence the problem of the inadequate remuneration of the medical profession and the drink problem are very closely related.

But there is a more altruistic aspect of the drink problem which should appeal with especial force to medical men. The prevention of phthisis and other forms of tuberculosis is a matter in which we are all most keenly interested. Overcrowded, ill-ventilated, dark, and dirty tenements are just the places where the tubercle bacillus finds its victims and spreads readily from one to another. And they, going out and scattering their infective expectoration in railway carriages, etc., become dangerous to others whose homes are too airy and cleanly to give the bacillus much chance to live outside of the human body. The prevention of tuberculosis is hence mainly a question of improved dwellings for the people. In London the housing of the working classes is a problem beset with special difficulties. But in most other places it is simply a question of £ s. d. It hardly needs pointing out that less than 6s. a week (the average amount shown to be wasted on drink by the families of the working classes) is needed to make the difference between the rent of two crowded rooms in a filthy, unhygienic tenement house and the rent of a decent home in a fairly wholesome neighborhood. It follows that nothing is likely to have such a decided influence in the prevention of tuberculosis as the general adoption of the practice of total abstinence from alcohol.

The majority of the medical profession know the ways of working men well enough to be quite aware, from their own observation, that a working man who does not abstain from alcohol altogether commonly spends much more upon it than he can well afford, even though he may not deserve to be called a drunkard. We ourselves may be fortunate enough to possess an income which places us above the necessity for close consideration of economy, and we may believe ourselves indued with such self-control that we feel no fear that we shall be tempted to excess. But we ought not to forget that our working-class patients are very differently circumstanced; they cannot afford to waste money, and it would be hard to find a poorer investment for their wages than spending them in drink. There is nothing more likely to draw a working man away from the practice of total abstinence than "doctor's orders" thoughtlessly given.

I shall make no apology for attempting to show that in taking the course which is manifestly to the advantage of the whole community we are also likely to benefit ourselves. The man who fails to do his duty because his interest is opposed to it is a rascal. But the best of men may find it easier to do his duty when he knows that material advantage to himself is likely to follow.

Of course, all this is dead against Dr. Reid's theories about alcohol and heredity. According to him the way to secure sobriety for the human race some thousands of years hence is to let alcohol have its own way for the present, and (with the aid of those beneficent eliminators of the unfit, poverty, and starvation, and tuberculosis, and crime) get rid of all who have "an inborn capacity for delighting in it." I do not suppose that most of my readers will feel that the necessary sacrifice of this delightful dream of the future is a fatal objection to my suggestions for present action. Some of us may venture to doubt whether Weissmann's facts are sufficient to support his own theory. But the inverted pyramid of inference which Dr. Reid has tried to balance upon Weissmann's dogma would topple over even if the foundation upon which he has rested it were firm as rock.—*The Lancet.*

THE SO-CALLED DANGER FROM THE USE OF BORIC ACID IN PRESERVED FOODS.

By DR. OSCAR LIEBREICH.

In a thorough investigation on the action of borax and boric acid I have not been able to demonstrate that these two bodies are included in the so-called toxic-acting substances in so far as they act through absorption from the intestine. My researches show that the misleading and frequently disseminated statements to the contrary are at present without foundation. This preliminary question must naturally be settled before the hygenic and legal aspects of the subject can be taken up—as to whether, and in what quantities, it is allowable to use these two substances as preservatives for articles of food. These questions are too often regarded, not from the purely scientific standpoint, but in the light of their value in the interest of political and agrarian parties in different countries. This is shown by the frequent republication of old and quite inconclusive investigations, particularly by the daily press, statements which are likely to mislead both legal and public opinion. It is not my intention to enter now into my investigations on this subject. These will appear in the *Vierteljahrsschrift für Gerichtliche Medicin* and will shortly be published by Churchill in pamphlet form. The reason for my again taking up these questions is an article by Dr. H. E. Annett on "Boric Acid and Formalin as Milk Preservatives," which appeared in *The Lancet* of Nov. 11th, 1899, (p. 1282). It would be quite sufficient only to criticise this investigation, but it seems advisable also to make some introductory observations.

In the first place Dr. Annett cites the following from the report of the committee of the Local Government Board: "There is no doubt that boric acid if taken in large quantities would be injurious to health, but we have not sufficient information to show whether such minute quantities as are generally added as preservatives would be regarded as having that effect, and more exact information is wanted before it can be decided whether a process which prima facie may be regarded as intended to prevent the loss of valuable foods must be held to be prohibited by law." Dr. Annett adds: "It is remarkable that that 'sufficient information' on the action of minute doses of 'preservatives' habitually taken after the lapse of a period of almost 10 years is still not forthcoming." Dr. Annett is quite right. It is indeed strange that during 10 years of experimental work, taken part in by a great number of investigators, it has not been forthcoming, and that during these 10 years of experience of practising physicians there has not been forthcoming any instance of injury to health from the administration of small doses of borax and boric acid. Particularly so, in my opinion, for during this time a very excellent opportunity has been afforded for practical observation, because the use of boric acid in small doses has been very extensively resorted to. This gives evidence to the experimenter that the existence of an injurious influence of small doses could only be demonstrated with great difficulty, if indeed it exists at all. One would expect that Dr. Annett had succeeded in obtaining the required proof. However, this is not the case. He begins by enumerating the injurious effects of excessively large doses in animals and confuses these with therapeutic observations. In such a scientific criticism it would have been fairer not to have suppressed the facts that excessive doses administered by the mouth cause only passing harm in man and that the injection of excessive doses of borax and boric acid in the body cavities of patients produces distinct intoxication and even death. This is well known and not to be wondered at; but from this latter fact no conclusion can be drawn as to their toxicity when administered through the stomach and intestine, for the purpose of forming a judgment on the use of small quantities for the preservation of food. We are aware that many substances are harmless in the intestinal canal if swallowed, but that if injected subcutaneously or into the body cavities they act as poisons. Further, Dr. Annett states that the most eminent authorities of this country, who by means of *The Lancet* Special Sanitary Commission on the Use of Antiseptics in Food of 1896 published their opinions on the question of food preservatives, were unanimously of opinion that the use of antiseptics in food was injurious to health. Reference to the columns of *The Lancet* convinces me that this statement is totally inaccurate. It is only necessary to cite the words of two authorities. Professor Halliburton[1] says: "I and all of us are continually taking such food (especially milk treated with boric acid) without any appreciably bad results." And Professor Bradbury[2] says: "I am disposed to think that the presence of small quantities of salicylic, boric, or benzoic acids, in sufficient quantities to preserve it is not injurious to health." The conclusion of *The Lancet* itself was as follows: "As will be seen from these communications there is considerable diversity of opinion as to whether antiseptics in the quantities used for preserving food are injurious to health, and also whether legislation could satisfactorily deal with the subject, although on the whole the conclusion appears to be not altogether unfavorable to the use of preservatives with certain restrictions. The majority agree in one thing, and that is that should the practice be tolerated it should be placed under some control, so that, for instance, where the addition of antiseptics is practised it should be notified to the purchaser. Very few of our correspondents, it is important to note, are able to quote cases within their experience of injury to health having been caused by preservatives in food."

One can be certain that if medical men of the standing of Dr. Lauder Brunton and others had been able to satisfy themselves that the small quantities of antiseptics necessary possessed even a trace of injurious influence they would at once have concluded it was altogether better to entirely forbid the preservation of food. From the researches of this commission it can also be inferred that the authorities referred to held that it was better to preserve food with these small and non-injurious quantities of antiseptics than that any section of the public should be obliged to eat decomposing food, regarding the injurious nature of which no doubt exists. Dr. Annett quotes Binswanger also incorrectly. More extensive quotation would have clearly shown that as the result of his investigations Binswanger held that small doses of boric acid exercised not only no injurious action, but so little action whatever that it was practically inert. These misquotations have already been corrected in my pamphlet, but it seems to me necessary to refer to one more important point.

Dr. Annett himself draws attention to the fact that the only direct instance of the injurious action on man of boric acid when added to milk is that recorded by Dr. A. R. Robinson[3] and referred to by Dr. Annett in the following words: "Five of the seven inmates of a certain house became suddenly ill after partaking of blancmange which had been made from milk of the previous day, to which, as was confessed, the dairyman supplying it had already added boric acid and to which the cook had added a further quantity to preserve it over night. Nine fowls fed liberally with the blancmange became ill, five dying." From such a description it is not possible to form any idea as to what the nature of the illness of the inmates was. One may pass over the question as to what symptoms were exhibited by the hens, and what were the appearance that would have been present in the post-mortem examination (which was not made), and I put to Dr. Robinson the question if he has not observed, after blancmange, after ice, and particularly after milk, similar sudden illness without any boric acid having been present. It is not uncommon for illness to ensue if food has been kept in vessels in contact with metal, as in the case of blancmange often occurs. But the first question for a sanitary officer to settle was the mode of preparation of the blancmange. In the cookery books of different nations the ingredients are stated as follows: Milk or cream, bitter almonds, sugar, gelatin, vanilla, lemon peel, and bay laurel leaves. From this it is evident that it is not impossible that things may have been present which are known to afford opportunities for poisoning to occur. Vanilla is often such a cause, and the possibility for poisoning even by prussic acid exists through an excess of bitter almonds being used. The bitter taste of these is by no means a protection to the people partaking of the food, for the laurel leaves and lemon cannot only conceal this, but the combination with bitterness may also add an extra flavor. Also the milk may have already been poisonous before the addition of the boric acid, and it is well known that boric acid only prevents the further formation of toxic bodies without destroying those already existing. Of not one of these possible contingencies has Dr. Annett taken any account, and it is now impossible to determine whether any of these same factors were present. One can, however, through investigations on hens, prove Dr. Robinson's assertion that the boric acid contained in the blancmange was the cause of the illness of the people and of the hens is without foundation. It should have been Dr. Robinson's work to investigate this and show whether hens can be poisoned or not by feeding them on blancmange to which boric acid has been added before he alarmed the world by making public so startling an assertion. For this purpose it was only necessary to clear up the whole question by so simple an experiment as the following:

---

[1] *The Lancet*, Jan. 2nd, 1897, p. 59.
[2] Ibid.
[3] *Public Health*, August, 1899.

I placed nine fowls for several days on ordinary corn-feeding, and observing that one showed some signs of respiratory trouble it was discarded and the following investigation was carried out on the remaining eight: On the first day one liter of milk and six grammes and five decigrammes of boric acid and 200 grammes of maize-flour were made into a thick porridge, which was equivalent to one ounce and 16½ grains in one gallon. This corresponded to a blancmange, and on it the hens were fed. On the second day they received the same feeding, and on the third day half of the same feeding. In three days the hens had each received about two grammes, or 30.86 grains, without any disturbance in health being noticeable. Their eagerness to eat corn was in no way diminished. On the twelfth day seven of the hens at 1 P. M. received 10 pills, each containing 0.05 gramme of boric acid—i. e., each received 0.5 gramme, or

7.72 grains. At 3 P. M. the same dose was repeated, so that every animal had received one gramme, or 15.43 grains. The eighth hen received 50 grammes of sweet almonds. On the thirteenth day no appearance of illness had manifested itself, and on the sixteenth day the fowls appeared perfectly well.

From this it is fully proved: (1) that if blancmange be prepared with milk and boric acid added even in such excessively large quantity as 6.5 grammes in a liter (or one ounce and 18½ grains in a gallon) it is not poisonous, and further that boric acid itself in such large doses as one to two grammes (or 15.43 to 30.86 grains) exercises no toxic effect on hens; (2) that the toxic appearances observed by Dr. Robinson in the hens did not arise from boric acid; and (3) that Dr. Robinson has not succeeded in ascertaining the true cause of the sickness which affected the hens and the inmates of the house. It is not necessary to state that my experiment on the hens has no other value than to prove Dr. Robinson's error.

Another point in Dr. Annett's article concerning the feeding of kittens requires to be gone into. Such experiments are extremely serviceable to the inquiry, but in the present instance the experiments performed do not fulfil their intended purpose, viz., to prove the toxic effect of small doses of boric acid when given for a long time. All that these experiments prove is already known, viz., that animals finally succumb under the repetition of large doses. I regret the necessity for adversely criticising these experiments, nevertheless, it is not stated how much the kittens ate, and the experiments show that conclusions based on only two series of experiments are founded on insufficient data, since two of the kittens fed on milk containing 40 grains died earlier than any of those fed on milk which contained 80 grains. It is necessary in order to form a reliable judgment concerning the feeding of kittens to have a long series of experiments. As I have stated, the difficulty is here present that the data given are imperfect. They permit, however, of a conclusion being drawn. One comes to the following results: If we take a solution of 40 grains in the gallon, corresponding to the second series of experiments, then there are 2.592 grammes in 4.545 liters (i. e., in one gallon) or 0.57 gramme in one liter. However, in the data given by the experimenter it is not stated how much of the milk the kittens consumed. It may have been a small quantity, say 100 cubic centimeters, which each kitten drank. In this case the animal ingested 0.057 gramme or 0.88 of a grain of boric acid. The mean weight of the kittens in the series was 408.4 grammes.

It must now be settled to what age in a child these three-weeks-old to four-weeks old kittens are comparable. If we accept that a man grows till he is 20 years of age, and that a cat grows till it is two years old, then the kittens experimented on may be compared to children of from nine to ten months old. A child of this age has a weight of, it may be, eight kilogrammes and 300 grammes, and corresponding to the weight of the kittens such a child would require to receive 1.13 grammes or 17.44 grains of boric acid. To obtain this it would be necessary for a child to use one liter and 983 cubic centimeters of the milk consumed by the kittens (0.57 gramme of boric acid in one liter). But such a child at the very utmost could only partake of one and a half liters per day, which would contain 0.86 gramme, or 13.25 grains, of boric acid. To make a general comparison with the experiments on the kittens, since the child has a weight of eight kilogrammes and 300 grammes and the kittens of 408.4 grammes, the kitten ought to have received no more than 0.042 gramme of boric acid, and this quantity must be contained in 100 cubic centimeters. This would correspond with milk containing only 0.42 gramme per liter or 29.45 grains per gallon, while as much as 40 grains per gallon was used in these kittens. This difference of more than 25 per cent. of the stated quantity of boric acid is very important, particularly when the treatment is continued over a long period. According to this calculation, made in a very favorable light from the experimenter's standpoint, it is evident that Dr. Annett is very far removed from having proved by his experiments that small quantities, if used for a long time, are poisonous for men and children.

*THE USE AND ABUSE OF HYDROCHLORIC ACID AND PEPSIN IN DISEASES OF THE STOMACH.

By F. W. FROEHLING., A.M., M.D., Kansas City, Mo.

The natural result following the discovery that the gastric juice contains, principally, hydrochloric acid and pepsin as digestive agents, was that physicians endeavored to supply the one or the other, per os in cases where they supposed that the stomach failed to produce a sufficient quantity of either. Before the advent of the stomach tube, as a factor in making a positive diagnosis of the various diseases of the stomach, the physicians had to rely on palpitation and subjective symptoms, and as the later evidence is usually misleading the physician as a rule resorted to the use of the acid or pepsin, it was an even chance, hit or miss.

I am sorry to say that this same practice yet largely prevails among even intelligent practitioners. It is self-evident that in order to obtain good results, it is absolutely necessary to use these two remedies at the proper time and place. The fact remains that even to-day a great many physicians are in the dark concerning the use of hydrochloric acid and pepsin. It is therefore of importance to discuss the matter whether they should be prescribed at all, and if so, in what cases.

As to hydrochloric acid, we all know that there are a number of diseases of the stomach, which diminish its secretion, and we certainly are justified in administering this acid in proper form, in such cases; but in such cases only. It is entirely without reason to supply a stomach which already produces enough, or too much of this acid, with still more. For this reason, if we wish to avoid injury to the patient, we must be posi-

---

*Written for the *Index-Lancet*.

tively informed as to the condition of the stomach before we prescribe. The subjective symptoms, as detailed by the patient, are of no assistance at all. Take for example, two patients, one having a lack, and the other a superscretion of hydrochloric acid, you will find that they will, with hardly an exception, complain of the same disagreeable feelings. Both have the same accumulation of gas in the stomach after meals. Both are terribly constipated and suffer more or less from "heart burn." The stomach of the first one is sour from fermentation and production of organic acids (lactic, ascetic and butyric), the other from the superscretion of hydrochloric acid, produced by the stomach itself. Each one, therefore, will tell you that he has a sour stomach. However, the latter condition is what we call a genuine superacidity.

Now, if we should, in this case, give still more hydrochloric acid, we would certainly increase the suffering of the patient, by adding fuel to the fire. On the contrary, if we give a patient whose stomach produces organic acid by fermentation, a proper solution of hydrochloric acid, we soon find that this fermentation has ceased and the sour taste disappears. Therefore, we can easily see the absolute necessity of a proper diagnosis. But how to make it? The only safe method is to examine the gastric juice obtained from the stomach by means of the stomach tube. For this purpose we have the patient eat a test meal (Ewald's, Riegel's, or others) and after a certain time, according to the nature of the meal, remove it from the stomach. If upon examination of the contents so removed and examined we find that there is a lack of hydrochloric acid, we are obliged to supply it.

To prescribe hydrochloric acid without this examination is only guess work and a physician runs the risk of jeopardizing his reputation by injuring his patient. Modern medical science supplies us with methods by which we can obtain definite results, and a physician who undertakes to treat stomach diseases should be thoroughly acquainted with these methods .

Having assured ourselves that hydrochloric acid is lacking and must be supplied per os, we have to decide how this is to be done. In order to answer this question, I think it proper to take the physiological conditions of digestion into consideration. The physiological acidity of the stomach is about 2 per cent. If we should undertake to restore the normal acidity by giving diluted hydrochloric acid—the average contents of the stomach after a meal being 1000 C. C., we would have to give 20 C. C. acidmur diluted or about 400 drops. This is certainly impracticable. For this reason Boas of Berlin and others state that the artificially supplied hydrochloric acid does not directly aid digestion, because we can only give small doses, which are not sufficient for direct digestion. We must therefore look in another direction for the beneficial results. (There is no possible doubt as to these beneficial results.) The experiments of Du Mesnil, Reichmann and others show that the supplying of hydrochloric acid produces an immediate, moderate secretion of the same material by the glands of the stomach; and every one who has experienced in the modern method of treating diseases of the stomach, knows that in many cases, not alone the process of digestion is improved by administering hydrochloric acid, but that the food will not remain as long in the stomach as it does without giving this remedy. We have therefore to look upon hydrochloric acid as a stimulant, as well as for the motor function of the stomach as for the function of secretion, i. e.—in cases of sub—or anacidity. But besides this, in my opinion, we cannot safely deny that hydrochloric acid given in these small quantities has not also some direct effect upon digestion. Certainly even these small quantities will be absorbed by the albuminous food in the stomach, which means nothing more nor less than aiding digestion. The opinions of authors differ to a great extent upon the question as to how much hydrochloric acid we may give and when to give it. Some consider it best to give only small quantities (5 drops in water) and before meals. Others give larger quantities after meals. Rosenheim recommends 6 to 10 drops, and Ewald three 30 drop doses at intervals of fifteen minutes, each after meals. The most satisfactory way I have found, is to follow Riegel's advice, who decides how to administer the acid in each individual case. I begin as a general rule with a dose of 15 drops, and find out by means of the stomach tube how this dose acts, repeating the examination several times if necessary. As all of these patients require thorough washing out of the stomach, this observation can easily be made without materially inconveniencing them before the washing takes place. By this means we can ascertain positively how much hydrochloric acid different patients require. As a rule I find it necessary to give from 10 to 20 drops at one hour intervals after each meal until 30 to 60 drops are taken.

In very few cases I am compelled to reduce this quantity, because of the discomfort produced at the height of digestion.

Rosenheim and others have had practically the same experience. In mentioning the various doses of hydrochloric acid, I mean always diluted muriatic acid. It should be taken in about a quarter of a glass of water, through a glass tube, and thus protect the teeth.

If a physician follows these principles, he will soon notice the beneficial effect and furthermore, will have the satisfaction of feeling that where his former method would not bear criticism it is now based upon the exact requirements to remedy the pathological conditions.

The second active constituent of the gastric juice is pepsin. This is perhaps the most abused element in the whole materia medica—even more abused than quinine and calomel, especially in the United States.

We can obtain the purest hydrochloric acid in any drug store, but the case is entirely different with pepsin. It is taken from the stomach of animals, but as pepsin is not a clearly defined chemical we are not always sure that we are giving pure pepsin.

The German pharmacopœa (I do not know how it is with American) requires the following digestive power of pepsin: 10 C. C. of the hard boiled white of an egg, pulverized, is mixed with 100 C. C. of water heated to 50 degrees, Cent., to this is added 10 drops of muriatic acid and one decigram of pepsin. This mixture is placed in a receptacle heated to 445 degrees Cent. and left there one hour, being shaken repeatedly. At the end of this time the albumen must be digested. Until very lately there was no preparation of pepsin on the market which fulfilled this requirement entirely. Even the best preparation required twice this length of time, and some failed to change the white of egg at all. Recently preparations have been made which are said to be perfect. Some manufacturers claim that they have a pepsin capable of digesting from 3 to 5,000 times their volume. But when we compare the slow action of these so-called perfect preparations with the almost instantaneous peptonizing action of the genuine glandulary secretion taken from the human stomach, experimenting under blood heat, we must agree that we cannot expect much, even from the best of these preparations, but suppose we are able to obtain a preparation equally as efficient as that produced by the human stomach, the use of pepsin would still have no scientific basis. Certainly, we could only administer pepsin in cases where there is a deficiency, but these cases are rare. Every one who has made qualitative examinations for pepsin has experienced that even if he finds a great lack of hydrochloric acid, there is often neither no alteration in the quantity of pepsin, or if so (as its digestive power is great) enough for proper digestion is nearly always produced. Only in cases of entire atrophy of the mucous membrane of the stomach, and consequently its glands, is a real deficiency to be found.

If we absolutely insist in giving pepsin, it can be done logically only in such cases, but even then it would have no beneficial result.

Pepsin can only change albumen into peptone when there is free muriatic acid. This is a physiological fact which has been definitely determined for some time. Now in cases where there is a deficiency of pepsin, there is also certainly a deficiency of muriatic acid.

According to our position concerning the use of acid, we shall never be able to produce a free unbound acid in such a stomach by giving it through the mouth. Therefore, pepsin, given per os cannot act at all. It will either be absorbed by the stomach, or, which is more likely, carried into the intestines. Guided by these facts, all our great stomach specialists have discarded the use of pepsin entirely, or nearly so. They only expect a suggestive result by giving it to intelligent patients who have heard of pepsin and its digestive powers, and look for a good result.

When one considers these, as I may safely term them, positive and definite facts, and think of the great number of large bottles containing essence of pepsin found in every drug store, he will be overcome with a feeling of pity for the poor people who have to swallow all this costly stuff. Neither the patient nor the physician will be benefited by it, but the manufacturer and the druggist are the ones who reap the reward.

Perhaps a number of physicians will reply that they have often seen good results follow the use of pepsin, but they may rest assured that as pepsin is nearly always given in connection with muriatic acid, it is the latter which does the work. Or the good effects are the result of nothing more than auto-suggestion.—*The Kansas City Medical Index-Lancet.*

THE BABY'S FIRST WEEK.*

By H. W. CUMMINGS, M.D., Hearne, Texas.

This short paper is intended only as an introductory to the important subject of the care and treatment of babies, which will be more elaborately discussed by the gentlemen who follow, in the continuance of the subject, taking up where I leave off and following it beyond the baby's second summer.

I merely desire to name a few points of interest touching the care of the baby during its first week, and make some suggestions, which if more closely followed by us in our daily practice, will save much suffering by the little fellows, as well as prove of vast help to the mother. The first week is only the beginning of the responsible task of raising the baby.

I am a great believer in nature as a guide, and thus will advocate a very simple and practical course, yet strange to say, one which is observed by few parents, as well as some doctors, in the care of the newly born.

With the assurance of your patience, I will give rapidly the technique I usually observe at the baby's birth. The main object we must keep in mind is that our attention should be such as to develop a strong and healthy baby, so we will begin at birth, by insuring all the vitality possible. Do not be in too great haste to sever the cord, allowing the child to receive all the blood from the placenta possible with which to establish an independent life. When you are sure this object is attained, sever cord, and dress same with some dry antiseptic dressing, and place bandage sufficiently tight to retain dressing, and insure against hernia. The skin around the cord may be oiled so as to keep dressing from sticking to body.

A second point of importance in the child's development is a proper expansion of lungs and sufficient supply of oxygen. Nature in her wisdom makes the cry, the first effort of the baby, which usually insures this point, but often we are called upon to assist in this matter. Clean the mouth and throat of mucus which often prevents the child's free breathing and give sudden shock by the applications of hot water or even cold water sprinkled upon chest suddenly. Usually this will accomplish your purpose.

The third point I desire to mention is the proper protection of the skin. Coming as the newly born from a habitat of such regular temperature, as that of the mother's womb, is it surprising that we may expect ill effect from improper care of the child's surroundings who has been so suddenly expelled into so variable a clime? With great care should the child be bathed and its body oiled, using as little friction as possible, and then dressed in soft, light, yet warm, clothing. Flannel should be placed next to body, and the child placed where it will not be often disturbed.

The eyes and mouth should receive especial attention, that they be thoroughly cleansed. The failure in this is generally the cause of inflammation of these organs from the acid secretions of the vagina.

---

*Read before the Brazos Valley Medical Association, Hearne, November 14 and 15, 1899.

The neglect of the points here mentioned in bathing and dressing are more frequently than we think the cause of catarrhal inflammations, colic, etc., as well as irritation of skin, so common among children.

In closing my part of this subject I desire to mention only one more point, and, while it will more properly come up in the paper to follow me, in this subject, I cannot refrain from mentioning it.

Many times, no doubt, in your experience, that after you have turned your attention to the mother, some old lady, in a tone expressing her profound confidence in its wisdom will ask, "Doctor, what kind of tea do you give the baby?" Of all times in a physician's professional life, this I think, gentlemen, is the most opportune to do good. I shall not mention the exceptions where artificial feeding becomes a necessity; but, treating the ordinary and majority cases, I want to ask why do our lady friends want to give anything?

Nature again has made ample provision for the baby's maintenance, and, in my opinion, art has proven utterly incapable to provide as good food, to say nothing of finding a better one. We all know that it is grossly wrong to give artificial food to an infant when the mother gives a normal quantity and quality of breast milk. Then let us be sufficiently diligent in the discharge of our duty to not only advise, but insist upon mothers and nurses following our directions in so important a subject. There is no greater field for work than in this, for strange to say a large per cent. of women persist in feeding babies.

I do not believe that the many ill conditions attributed to teething, etc., are justly so; but I do believe the origin of all bowel troubles under two years old are due to some foreign substance which enters the mouth. They may be influenced in their severity by heat, cold, teething, etc., but the primary infection comes through the mouth.

Now, gentlemen, I have told you nothing new, but if my few words should impress some of you to more carefully guard these points and more earnestly enlist in the war against the abominable practice of feeding babies, I shall have accomplished my purpose.—*Texas Medical Journal.*

PROTRACTED GESTATION.

By JOHN PHILLIPS, M.B., C.M., L.R.C.P. Edin.

The question of the duration of pregnancy being of considerable interest, not only from a medico-legal point of view, but also from that of general practice, I venture to report what I believe to be an authentic case in which it was prolonged to much beyond the usual period.

My patient was a primipara and unmarried. Intercourse was declared to have taken place on one occasion only—Sept. 6, 1898—the girl's age at that time being only 16 years and four months. Her menstrual periods had occurred at regular intervals, and they usually lasted about a week. Her last period had occurred in August, 1898, and had entirely ceased by the 24th of that month, this being the first day on which she considered herself "well," and it was from this date that I calculated the probable duration of pregnancy. In consequence of her missing her next two periods, in September and October, her aunt with whom she lived took her on Oct. 24 to a medical man in London, to whom the girl confessed, when questioned, that she had had intercourse, and he expressed the opinion that she was most probably pregnant. This proved to be the case and in April of the present year she came under my observation, and I was asked to attend her in her confinement, which I calculated would take place somewhere about May 29, this being the usual average period of 278 days from the cessation of her last menstrual period (August 24, 1898), from which I reckoned. Instead, however, of the confinement occurring at the expected time she not only went through the whole of June without a single pain, but labor did not set in until July 13, on which date the pains began at 6 P. M.—323 days after the cessation of her last period and 310 days after the date of coitus, the child being born on the following day at 4.30 P. M. There is not the slightest doubt that no menstrual period occurred, subsequently to that in August, as in addition to the girl's own statement her aunt, who always looked after her linen, and who consequently always knew when her niece was unwell, declares that there "was not a stain" subsequently to the August period. During the entire pregnancy the girl had excellent health and there were no pains of any description prior to the onset of labor, which was perfectly normal and the presentation the usual cephalic one. Unfortunately at the time I had no opportunity of having the child (a female) weighed, as it was sent away to be nursed almost immediately after its birth (within three hours), but although well proportioned and of good size it did not seem at all unusually large.

The late Dr. Matthews Duncan in his book, "Fecundity, Fertility, Sterility, and Allied Topics" (p. 348), is inclined to disbelieve in any case of supposed protracted gestation unless the size and weight of the child are above the average, considering that increased growth must follow lengthened gestation, but this cannot be taken as proved, and, as Dr. Playfair points out, even if it be admitted the fœtus may have been originally small, so that at the end of the protracted gestation it may be of no more than the average weight and there is certainly no reason to believe that the fœtus must necessarily be large simply because it has been retained longer than usual in the uterus.

This case, then, which lasted 323 days after the cessation of menstruation, is thus a parallel to the four instances reported by Simpson in which, reckoning from the same period, gestation was prolonged to 319, 324, 332, and 336 days respectively, and other instances as curious may be found scattered through obstetric literature. The case, however, becomes more exceptional and interesting when we consider the prolonged interval which elapsed between the date of actual intercourse and the onset of labor—310 days. Of the 46 cases reported by Dr. Matthews Duncan, who probably devoted more consideration to this subject than any other writer has done, he calculates an average interval between what he calls insemination (intercourse) and parturition of 275 days and other authors give other estimates—from 271 to 276 days. The longest of the series of cases recorded by Dr. James Reid in which he reckoned from a single coitus was 293 days and this he believed to be the extreme limit. Leishman, however, mentions one in which the interval was 295 days and Hedrich has recorded the case of a primipara who was delivered on the three hundred and ninth day after intercourse, whilst of those cases in which the duration of gestation has been determined by the death or departure of the husband Sir James Simpson reports one lasting 313 days and Dr. Hewitt another lasting 308 days. In more recent times Mr. Woollett reports the case of a girl, 16 years of age, in whom gestation lasted 315 days from the date of coitus. In this case, however, labor pains occurred on the two hundred and eightieth day, but passed off again, and another observer—Dr. R. McBride—has reported another case in which there was an interval of 296 days between a single intercourse and the occurrence of labor. It will thus be seen that the case of 310 days which I report is somewhat exceptional, and cases like these are of considerable importance from a medico-legal point of view.

In cases of contested legitimacy the English law and also the American leaves the subject of the duration of pregnancy an open question, each case being decided on its individual merits, but in France and also in Austria a possible limit of 300 days is allowed, and this is extended to 302 days in Prussia.

There are still many practitioners who disbelieve in cases of prolonged gestation simply because they have not met with them in their own practice. There can, however, be little doubt not only that they occur, but that they probably do so with more frequency than is generally supposed.

REMOVAL OF SEVEN UTERINE FIBROIDS WITH PRESERVATION OF THE UTERUS.

Blanc (*Loire Médicale,* April 15, 1899) has operated on a woman 35 years old who had been married for eight years, but had never been pregnant; she suffered from pains in the abdomen and from menorrhagia and pressure symptoms (constipation, dysuria, etc.); and examination revealed a tumor reaching as high as the umbilicus. The cervix was pushed forward against the symphysis pubis, but the body of the uterus was lost in the mass of the growth. The patient was anesthetized with ether and the abdomen opened. Seven uterine fibroids were found; one as large as an infant's head was attached to the middle line of the uterus; on each side of it, but also on the fundus uteri was another smaller one; none of these had a pedicle. Three smaller ones (size of an egg) were discovered in the vesico-uterine pouch; these were pediculated and freely movable. The seventh tumor was found impacted in the pelvis. All these growths were easily enucleated without opening into the cavity of the uterus at all, the operation lasting fifty minutes. Recovery was good, and three weeks later the patient left the hospital with a complete disappearance of all pressure symptoms. It is now two years since the operation, and the patient continues well and quite able for the very heavy work which she has to do.—*British Medical Journal*, July 29, 1899.

SYMPTOMS OF SANITY IN A CHRISTIAN SCIENTIST.—A woman in Boston was run over by the cars while returning from a Christian Science meeting, and her foot was crushed. She refused to go to a hospital and insisted upon being taken to a Christian Science healer. The latter, however, was strangely sane, and refused to give the woman any treatment, but advised her removal to a hospital at once. She was taken to the City Hospital and the foot was amputated. The healer said the woman had attended only one meeting, and was evidently carried away with the idea that the science of Christian healing included surgical cases, which, however, "scientists" were not prepared to treat. The healer's remarks were manifestly heretical and call for a bull of excommunication from "Mother."—*Medical Record.*

UNIVERSALITY OF GLANDULAR TUBERCULOSIS IN CHILDREN.—An editorial is as follows: "The old German army surgeon who expressed to the distinguished Niemeyer his belief that all people have a touch of tuberculosis would have good company if he were living to-day. Volland, who examined 2,500 school children, found that between the ages of 11 and 9 years no less than 96 per cent. had indolent, multiple, engorged cervical glands, which phenomenon he holds to be a pure tuberculous manifestation. This percentage becomes rapidly less with each succeeding year, until in adult life the number of individuals who present the phenomenon is comparatively small. In other words, the vast majority of children suffer during one period of lives with a form of tuberculosis essentially benign and self-limited. Blos, of Heidelberg, on the strength of these findings of Volland and others, scouts at the idea of the diffusion of tuberculosis by inhaling infected air and drinking infected milk, and returns to the old view that gland scrofula almost always precedes phthisis, so that one who develops consumption is self-infected from his own tissues. At the recent Congress of Tuberculosis at Berlin, several distinguished pediatrists agreed that the most direct and certain method of arresting the spread of tuberculosis was to treat scrofulous children in seaside sanatoria; whence we infer that they hold views akin to those of Blos and Volland. If practically all children have gland scrofula in a more or less benign form, it is a simple and most natural hypothesis that the weaker among them suffer later from pulmonary tuberculosis from autoinfection. We suggest that the profession set about confirming or denying Volland's alleged discovery without delay, by investigation of the cervical glands in connection with autopsies upon children."—*Am. Journal of Obstetrics and Diseases of Women and Children.*

INHALATION OF HOT AIR AND FLAME.—The summary of the evidence obtained by Crile's experimental research on dogs is as follows: The evidence tends to show that the direct effects of the flame inhaled into the lungs, with the upper air-passages excluded, are not capable of causing sudden death. When the flame is inhaled through the mouth and upper air-passages as well, a very marked reflex inhibitory action on both the heart and the respiration is produced. In such a case as cited a control has been taken—a control showing a characteristic inhibitory action on the heart and respiration—when both nerves are severed, the inhibitory action on the heart is wholly prevented, and while the respirations are not so greatly altered in their character, they do not wholly escape reflex influence. The same may be said of similar experiments in which physiologic doses of atropin had been given. The great irregularity of the blood-pressure curve shows that two factors are at work in its production, the one an accelerating, the other an inhibiting; and in the cases in which a blast of hot air or flame was introduced through the mouth, both of these factors were brought simultaneously into play, while in the experiments in which the flame was forced into the lungs through the trachea, but one factor—the accelerating—was active. In view of the fact that hot air and flame very markedly stimulate reflex inhibition of the heart and the respiration, it is quite probable that the sudden collapse from inhaling hot air or flame is due to the reflex inhibition of the cardiac and respiratory action, in the way just pointed out. Death may be caused in a few minutes by exhaustion of both the respiratory and circulatory mechanisms from overstimulation.—*The Journal of Am. Med. Assoc.*

PREVENTION AND TREATMENT OF PUERPERAL ECLAMPSIA.—Davis insists on the regular action of the bowels and attention to the condition of the kidneys. He thinks that tea and coffee used habitually and to excess are very deleterious, and should be cut off entirely; alcohol likewise. While emptying of the uterus is important, it is not alone sufficient to meet the indications. All reflex irritation originating in the uterus should be removed. As many organs as possible should be aroused to elimination by the most direct and efficient agents. The skin should be excited by a hot moist pack. Calomel in a 5-grain dose, and thorough irrigation of the large intestines, should be employed. He does not favor bleeding, and the weight of opinion is against the use of pilocarpin and large doses of morphin or chloral or potassium bromid. There is, however, evidence that in the absence of bleeding the hypodermic use of veratrum viride will have a good effect, and when bleeding is not practiced, hypodermoclysis and the use of veratrum viride would have the same effect as bleeding, though less rapid. In the period after labor, when the patient has begun to eliminate slightly, but is still restless and semi-delirious, morphin and codein have their uses, and strychnin may be called for if the heart's action is deficient. If the toxemia has not been too long continued, and the patient is young and healthy, the prognosis is not bad, but if it is of long standing and the patient debilitated, or if she is a primapara above the average age, the chances for recovery are bad. The physician should first direct attention to diagnosing and treating toxemia and then if eclampsia occurs, and he cannot treat it vigorously in the best manner, he should call in assistance. Delay is dangerous.—*Exchange.*

CRANIECTOMY FOR MICROCEPHALIC IDIOCY.

W. J. Wilson, M.D. (*Canadian Journal of Medicine and Surgery,* 1899, vi., 425), in a brief article on "Craniectomy for Microcephalic Idiocy," says there are so many condition which, in microcephalus with idiocy, may be present either as a cause or simply in association—conditions which during life it may be impossible to diagnose—that the question whether we should operate in any given case becomes a matter of very serious consideration. There can be no doubt that premature ossification does take place, that fontanelles may be closed and the sutures ossified at birth, but whether this is a cause of the microcephaly, as was thought to be the case by Lannelongue, or a result of arrest of brain development is still a debatable question. When gross cerebral lesions, such as extensive sclerosis exist, the chances for improvement cannot be good. Operations on the skull for microcephalic idiocy will not take a permanent place in our treatment until a large number of cases have been observed, and we are able to have judged better just what conditions may or may not be improved by operation. It is with this object in view that the following case is presented: Henry R., aged five years. Family history good. No idiocy, deformities or insanity in the family of either parent. No history of tuberculosis or syphilis. One sister died from laryngeal diphtheria. Has two healthy brothers. There is a difference in the age between Henry and the next elder child of fourteen years. During these fourteen years there were no miscarriages. One since. Parents both healthy and strong; grandparents on both sides lived between seventy and eighty years. Other members of the family have average-size square heads. Mother had no frights and no thoughts of trouble during gestation. At birth baby weighed seven pounds, was plump and fat, but his head was very small. His mother noticed there were no openings in his head.

Dr. Webster, who saw the child when six months old, says at that time there was no trace of fontanelles. He was a small feeder. Was nursed on the breast for fifteen months, but did not thrive well. At sixteen months he weighed fifteen pounds, was apparently healthy, but did not grow like other children. He was three years old before he could stand alone. His ankles were weak and turned in. Sight and hearing normal so far as known. In walking he bent forward almost to a right angle. He was restless and cried a great deal, was a bad sleeper, waking frequently during the night. When four years old began taking thyroid tablets. He began with one five-grain tablet per day, and by the end of nine months was taking four tablets or twenty grains of P. D. & Co.'s thyroid extract per day.

During this time his legs improved very much in strength and became straighter at the ankles, but body remained bent over in walking. Five months ago he was admitted under the author's care at the Western Hospital. At this time he could only say one word—mamma—and this he used for every person. He would not play with his toys, was very restless and rubbed his head a great deal. He was then five years old, and it was noticed he was cutting his lower central incisor teeth. His first dentition began at the fifth month. His disposition was affectionate, but at times he became vicious towards other children. The cranial measurements, after hair was removed, were: Circumference at tip of ears, 14¼ inches; over vertex from meatus to meatus, 9¼ inches; diagonally over frontal bone from meatus to meatus, 8¾ inches; diagonally over occiput from meatus to meatus, 9 inches. Early in April an incision was made on one side of the sagittal suture and about one inch from it. At the first incision a piece of bone one by two inches was removed. This was followed by very little shock, and in about three weeks a similar incision was made on the other side of the head. These two incisions were extended to about four inches by one inch on either side of the sagittal suture, and at periods of two or three weeks apart, making in all four operations.

The skull was first opened with a trephine, and the opening then extended by the aid of punch forceps. The periosteum was pushed to one side, but not removed, and the dura mater was not opened. There was some bulging of the dura at each operation. The skull was not thick, but so dense it took a very hard pressure of the forceps to cut it through. There was not much hemorrhage, but it was remarked there was an increased amount at each operation. The bone lifted easily from the dura except during the last operation, which was on the posterior part of right incision, and here it was attached more firmly. No other conditions were noted. Shock was very slight after operation, and next morning he wanted to sit up in bed as usual. Some improvement was made from the first. He became easier to manage, and played more with his toys. He has learned a great many words and short sentences, and is learning more daily. His disposition is milder, he sleeps all night through, and has quit, for the most part, movements of his hands, which before operation were very marked. While he does not always stand erect or walk without some bend forward, his gait is vastly improved and he stands erect most of the time. He has had no special training since operation other than by his mother, so that training does not account for his improvement. Henry has always been quite musical and picks up tunes readily. He did this before operation.

When he came into hospital his circulation was bad, his hands cold, blue and damp. This was attributed to the use of the thyroid, and after it was discontinued his circulation improved.

The conditions in this case which decided for operation were (1) early ossification of sutures and fontanelles and early dentition; (2) absence in so far as could be discovered of gross brain lesions.

THE OPERATIVE TREATMENT OF VARICOSE VEINS.

Pierce Gould (*The Lancet*) reports fifty cases of Trendelenburg's operation for varicose veins. It will be remembered that this operation consists in excision between double ligatures of a short piece of the internal saphena vein in the thigh, the object of this procedure being to protect the varices from the pressure and reflux of blood from the common femoral vein and venous trunks above it.

In any attempt to appreciate the value of this operation, an account of its immediate results up to the time the patient leaves the surgeon's hands is of no value. It is all-important to learn the later history of the patient. This Gould has been able to do in thirty-nine out of the fifty cases, and personally has seen twenty-five of them. In no single instance did the operation fail to relieve the patient of all pain, and it was invariably followed by a marked, often a very marked, shrinking of the dilated veins, sometimes to quite their normal size, in others to just short of that. This shrinkage may progress for many months. In no case did thrombosis develop above the ligature.

One of the most troublesome complications of varicose veins is aseptic thrombosis; it is sometimes very painful, and it is not free from danger to life from embolism, and the course of the disease under the common palliative treatment is often exceedingly slow and not infrequently followed by relapse. Under these circumstances it is reasonable to try whether surgery does not afford a better means of dealing with these cases than the older methods of rest, local sedatives, moderate diet, alkalines, salines, and great patience. Thus, Gould has treated two cases of aseptic thrombosis by excision of the thrombosed portion of the vein and immediate closure of the wound. Union by first intention was obtained. —*Therapeutic Gazette.*

PEDICULI CAPITIS AS A CAUSE OF ENLARGED CERVICAL GLANDS.

By BATTLE MALONE, B.A., M.D., Memphis.

Almost every writer on the subject of pedicilosis capillitii remarks upon the frequency of enlarged glands as a complication of this disease; yet I believe that most practitioners readily assume that a patient with enlarged cervical glands is a tuberculous subject, and pay no attention to head lice as an etiologic factor. Without eliminating the possible parasitic cause the patient is either dosed with various medicines supposed to effect destructive tissue changes, or else referred to the surgeon, in whose hands the destruction is more certain and complete.

It is a very simple thing to examine the scalp and hair for pediculi and nits—so simple, in fact, that it should never be neglected when a patient with a noticeable swelling on the side of the neck presents himself for treatment.

When the parasites are found the treatment is as simple as the diagnosis is easy. Remove the cause and a cure rapidly follows. The cases where the removal of the lice is not followed by a rapid disappearance of the glands are very few in number.

It is to be remembered that social position is no barrier to parasites, nor should a fear of wounding "feelings" prevent a careful examination. Though the patient, especially if a woman, may be mortified and indignant at first, she will remember you much more gratefully, though perhaps not so long, as the one with a great cicatrix on each side of her neck.

Case. K. D., 4 years old, was brought to me by her mother, who was anxious to know if the baby had "scrofula." A mass of glands the size of a hen's egg was found just below either ear. An examination of the occipital portion of the scalp revealed no pediculi, but an abundance of nits was found attached to the hairs. The impetiginous lesions so frequently found were absent. When I assured the mother that nits alone were responsible for the swelling, she was rather skeptical as to the correctness of the diagnosis, but readily promised to get rid of them. She was instructed to mix equal parts of kerosene and sweet oil and to soak the scalp night and morning for two days with the mixture; on the second day to wash the head thoroughly with soap and water, then to wet the scalp with vinegar and comb the hair with a fine comb. On the third day the patient was seen again, the nits having been removed. Two weeks later a final examination was made; there was no swelling noticeable, and it required careful palpation to discover the glands.

I have seen numerous cases similar to the one detailed here, in the service of Dr. Lusk at the Roosevelt Dispensary. Formerly there as elsewhere these cases were referred to the surgeon, who immediately operated. Now, all cases of enlarged cervical glands are first sent into the skin room, and a large proportion of them are cured simply by the removal of the pediculi capitis.—*New York Medical Monthly.*

MALARIA AND MOSQUITOES.

We would draw the attention of those of our readers who are interested in the investigations which have been carried on by various observers as to the relation alleged to exist between malaria and mosquitoes to a paper by Dr. G. Bastianelli and Dr. A. Bignami published in this issue. We owe the translation of this paper into English to Dr. G. Sandison Brock. An excellent résumé is given of the present state of the question, which will be understood not only by those who have followed the accounts which have appeared from time to time in medical literature of the researches which have been conducted in malarious districts, but also by those who are not acquainted with the work already accomplished. Due credit is given to other observers. The æstivo-autumnal parasites are first considered and a sketch is given of the two life-cycles which they present, one of which is completed entirely in man and is the cause of the fever, while the other is only initiated in man and is completed in mosquitoes of the genus anopheles. All three species of malarial parasite, distinguishable with certainty from each other, adopt as host the same species of mosquito, and the authors of the paper proceed to discuss whether the parasites preserve intact the distinguishing characters of their species. An affirmative answer is returned to this question, relying not merely on morphological data, but also on the results of experiment, and it is shown how even after their passage through the anopheles the species of malarial parasite remain distinct and do not become transformed one into another. Further, it is affirmed that a single infected mosquito is capable of inoculating malaria into man, and even more, namely, that a single mosquito by successive bites can infect several people. It sometimes happens that two species of parasite may develop in one and the same mosquito—for instance, an æstival and a tertian parasite—the two remaining distinct, so that it can well happen that a single anopheles may inoculate a mixed infection. The combination of the two fevers is by no means rare in Italy. The knowledge of these facts is of considerable practical importance. It has been suggested that much may be done to mitigate the prevalence of malaria in a district by destroying the breeding places of the anopheles, but the above facts indicate how thoroughly that would have to be done in order to make any appreciable effect in the occurrence of the disease. The concluding paragraphs of the paper are particularly worthy of attention, for they refer to the measures of prophylaxis which should be taken against infection. It is insisted that the careful treatment of the malarial patient constitutes one of the principal tasks of social hygiene. The authors maintain that the energetic treatment with quinine from the commencement of the infection of the æstival fevers not only reduces the danger of relapses to a minimum, but has a great importance for general prophylaxis, since the parasites by its means can be prevented from developing into those forms which continue their life in the anopheles. The treatment of the malarial patient ought, therefore, to be carried out systematically and energetically in the same manner as is practised when countries are invaded by other epidemic and contagious diseases.—London *Lancet*.

AN ADDRESS ON ACIDITY.*

By JAMES F. GOODHART, M.D., Aberd., LL.D.,
Consulting Physician to Guy's Hospital.

(CONDENSED.)

GENTLEMEN: After thinking over many subjects upon which I might address you, I at last decided to take up the—shall I say hackneyed?—subject of acidity. I have chosen it with some reluctance, because I have on other occasions and in other places introduced it into addresses, although not in the dominant way which I propose to myself on the present occasion. But I do not find that the opinions which I shall advance (they are not mine only or originally) are as yet, at any rate, generally accepted, and yet I believe them to be true. Everyone who holds a pronounced opinion of any kind is always sure that he is right and that everyone else is wrong, and I should not be surprised if a majority of my hearers this evening stood in this relation to me of "everyone else." This, at any rate, may serve to rouse your interest.

Now, there are several kinds of acidity. I may say that I am going to treat my subject from an entirely clinical standpoint. The complaint, for example, is often made that this or that individual has such an acid taste in the mouth; another lot of complainants will tell you that they cannot take anything acid, another group will assert that such-and-such articles of food, maybe even common articles of diet, will turn *acid*. As to these perverted tastes or sensations I am really not able to give you any information as to their cause; nor can you, I expect, do any better for me, for, although both patient and practitioner are too often satisfied with ascribing such a state of things to the liver, I am not clear that such an ascription helps one much, and still less so that it is correct. But if you suffer from acidity, it practically means for all of us that it is uric acidity, and it is of uric acidity alone that I intend to speak today. I will begin by giving you the notes of a case that I was able to observe under unusually favorable circumstances, for the patient was much interested in his multitudinous symptoms and active-minded enough to record them intelligently.

---

*Delivered before the Reading Pathological Society.

A man between 50 and 60 years of age, apparently in excellent health, a hard worker, and a most abstemious liver—for he drank nothing alcoholic and lived largely on milk foods, of which he had always been fond and digested excellently—was taken suddenly, perhaps after exposure to the poison of influenza, with a general tenderness of some bad teeth, which chopped about in a most erratic way, being now in this tooth and now in that, the affection leaving one point completely when another was attacked. Within a day or two he was awakened suddenly in the night with a feeling of extreme distension under the diaphragm; there was no pain, but the distension was so great that he felt as if he must burst and his breathing was hampered. The attack passed off within a few minutes and he went to sleep, not, however, before he had noticed that his toothache had suddenly and completely gone. Two days later a similar seizure occurred of a more severe character, leaving behind it a soreness in the epigastrium, but with this exception—it, like the previous attack, vanished never to return. He now began to have profuse night-sweats, chiefly associated with sudden uncontrollable panics, which would wake him up suddenly between 2 A. M. and 3 A. M. and render him absolutely sleepless for the rest of the night. He then noticed for the first time that he was passing a quantity of uric acid in his urine, entirely confined to the urine first passed on rising in the morning. As there was still a considerable amount of soreness in the epigastrium resulting from nocturnal attack he dieted himself for many days, exclusively on toast and butter, milk, junket, bread and milk, custard and rice puddings, but the uric acid in his urine (expressed as obvious sand) became more and more abundant, and seemed to coincide in this respect with increasing nervous depression. He now had another freak, and for a few days had a "paroxysmal toothache," as he described it, in his chest. Every few minutes throughout the day and night, when awake to notice it, he had a momentary twinge of pain behind the sternum, associated with a sudden glow or flush over the head. This was apparently angina-like in its character, but there was not the least disturbance of the heart's action, and walking and even climbing hills made not the least difference in its coming or going. This condition would last perhaps 24 hours or so and then cease, leaving him particularly well, and after two or three recurrences it ceased altogether, to be replaced by a similar sort of pain in the abdomen, which for many weeks kept him in a state of great discomfort and distress, being associated, as it was, with a horrible feeling of "gone-ness" in the epigastrium and so much hyperæsthesia of the intestine that the slightest peristalsis seemed to become obvious and discomforting. Added to this he had obstinate constipation, quite foreign to his habit, and any attempt to counteract this instead of bettering matters added greatly to his discomfort.

But these are digressions. During all this time the patient was keeping to a milk diet, and the uric acid output, although varying and most energetically so, was nevertheless not obviously influenced by the diet, and inasmuch as he did not improve a *volte face* was ordered and a meat diet was substituted for much of the farinaceous food hitherto taken. He now had meat twice and even three times a day. All green vegetables were excluded from the diet because for the time being they seemed to cause flatulence and more discomfort, and he was allowed only a small quantity of fluid at his meals for a similar reason. From this time he gradually increased the quantity of food taken, until he ate much more largely than he had ever before done, and he also took on and off for two or three days at a time a glass of port wine at 11 A. M. and beer or cider for dinner. Under this régime all the uric acid sand disappeared from the urine and he recovered his health. Since then he has continued to live much more freely than he had ever before done in the matter of meat, he eats less starchy food, takes an occasional glass of beer or cider—a thing he had not done for years—and he keeps well. One other point may be mentioned, although it is too large to be dealt with here—it is that he was distinctly not so well if he indulged in any brisk exercise.

Now, I have given this case in detail because it seems to me, first, of interest in itself, and, next and more particularly for my present purpose, because of the conditions under which gravel appeared in the urine. In itself it is worthy of note because here was a man of by no means what would have been called a nervous temperament, who suddenly passed into a condition, possibly from overwork, possibly from influenza, in which he became the sport of neuralgias, now in the teeth, now in the head, now in the thorax, or in the stomach, the intestine or the diaphragm. And I suppose that insomnia may be considered a similar condition, for it is an unnatural alertness of brain cells which ought to be paroxysmally sluggish. I do not doubt that the case is what most men would unhesitatingly call a case of uric acidity or irregular gout. It has all the characteristics of that affection—the neuralgic type of the disease, the rapid substitution of one neuralgia for another, of one nerve-storm for another, and the rapid change from a feeling of perfect health to that of positive gloom. And I would have you particularly to note that it occurred in a man who could hardly be living on a diet less calculated to produce uric acid according to usually accepted doctrines. He was a small eater and his diet was mostly milk, milk puddings, bread and butter, vegetables, and fruit. Meat would hardly on average have supplied two ounces to his daily diet, yet uric acid appeared in quantity. He dieted himself still more rigorously, to the practical exclusion of meat and for a time even of fish, and he got worse instead of better, and so he remained for several weeks, rest notwithstanding, until, indeed, he commenced to live more generously, and particularly so in the matter of meat and stimulants. It therefore opens up the questions which I want to discuss of uric acid and acidity and the treatment, if any, that best befits it.

Now, of course, the strictly chemical theory of acidity is this—that it is a mere question of chemical equations and combination. So much C and H and N and O are put in and so much C and H and N and O are given out in some or other form, and therefore excess of nitrogenous products taken in will lead to excess of nitrogenous products being given out; and therefore those articles of diet which give an excess of nitrogen will above all offend in this way. Thus it is said that meat is the chief offender in the production of uric acid, and that uric acid or one of its congeners getting into the blood poisons the tissues and so produces all the multiform symptoms—nervous, hepatic, renal, cardiac, and so on—which are ascribed to it in such truly liberal fashion.

Now, I am not here to-night to say that this is not true. I am here to contend that it is only very roughly true. True, perhaps, in the same sense that the artist's preliminary sketch in charcoal is to the finished picture as it hangs upon the walls of the Academy. I should call this the view of pure chemistry; but then our problem lies not merely in chemistry, but in animal chemistry, and that is a very different, or at any rate less demonstrable and certain, matter. And thus it is that clinical experience has to be taken into account; and in giving, as it does, a more comprehensive view, adds, unfortunately, much to our difficulty of forming positive opinions. And in this regard I want you think for a minute of how living a thing is uric acid. I chould call it one of the most fickle of animal products. Remember how paroxysmal it is; that it will alternate in some so that at one time there shall be a highly acid and uric acid urine, and at another a feebly acid, or neutral, or even alkaline, liquid containing phosphates. And, curiously enough, just as I have written this there comes into my room an old friend who has been long troubled with acidity, and who has to my knowledge often passed uric acid, but who, after a course of waters, has lately been passing a neutral urine, and on one occasion has passed an appreciable quantity of sugar—that is, 20 grains to the pint. So that he fitly comes in to link on my previous statement with the remark which I have next to make—that the passage of sand will often alternate with the passage of sugar, and particularly so with the glycosuria of the declining decades of life.

Then, again, uric acid will appear in the urine in quite remarkable fluxes in the course of chronic renal disease. I have several times, too, seen a fatal attack of renal disease begin, as one is obliged to say—although possibly not accurately so, for acute disease too often begins in pre-existing chronic change—by the appearance of a quantity of uric acid in the urine, and this has subsided to give place to a load of albumin. The occurrence of uric acid in the urine is well known in the early stages of chronic renal disease; and this may well be taken to suggest, as some have suggested, that the appearance of uric acid in the urine at any time is an indication of defective action on the part of the kidney. And, indeed, I see little reason to take exception to that view, but even if it be so we yet need to know what it is that makes the kidney defective, not only in those in whom by reason of age and other causes defect might naturally be expected, but even at all periods of life, from early infancy to old age—what it is that regulates function in this way so that at one hour one may say that uric acid is poured out and at another has vanished like a dream. And does not this so frequent occurrence of uric acid in the urine, surely almost as common in young children—not uncommon even in babies—as in adults of all ages, suggest the consideration of the question, can an occurrence of such frequency be such a harmful thing after all? May we not rather be inclined to feel that it is no more at any rate than a fit of bad temper that needs no treatment by heroic measures unless the circumstances are exceptional? And, indeed, this interpolation to some extent suggests the answer that I should give to the reason of the appearance of this stormy petrel of pathology.

One more case I must give. It is that of a man, 47 years of age, at the top of the tree in his profession—a position which has been achieved by continuous hard mental work, and in spite of the fact that there has not been a day in all the 20 years that he has not loathed his "trade," as he calls it. He came to me because of a bitter taste in his mouth, which he put down to "acidity," created, as he supposed, by a pint of claret taken daily at dinner. He has lately lost weight because he has had an unusual degree of strain and stress of work. He is spare and dark. His stomach is easily upset, he is sick easily, and he has to get up at night to pass his urine. I had a long talk with him, for he was a most interesting man, and I am sure that he is a most careful liver, his diet being chiefly milk and milk food. He thinks that he has created his "acidity." He is rather great on acidity, but he takes most sensible views of it, and is fully confident that the bed-rock of his ailment, as the Americans say, is his overwork. Still, he wants to "get this acid out of him," and asks about piperazine and all the latest drugs which are supposed to perform this service for cracked, crabbed and suffering humanity. He has a chronic lumbago, about which I am not altogether happy, particularly as his radial arteries are rather thick, and when lying down flat his impulse is in the sixth space outside the nipple. But the sounds are natural and his urine, although 1024 and containing uric acid, is free from either albumin or sugar. This is a case where the urine sometimes contains phosphates and sometimes uric acid in excess. I gave him no medicine, as all physic upsets him, but advised more meat and Contrexéville water in the place of so much milk stuff, and, best of all, a long and absolute holiday. He said on leaving me, "By the bye, I must have a little sweet," and I said, "By all means; a little won't hurt you."

And talking of this case reminds me that only the other day there came to me a young man who also was an adept at acidity. He was, of course, a highly nervous fellow, full of all sorts of fads and fancies, but what particularly amused me was that he complained of a pain in his side which was not acidity, "it was something quite different from that."

This was so precise a statement, on what is usually most indefinite, that I at once dropped upon it hoping thereby to obtain information on the position of the manufactory of acidity. But, alas! no, the comparison of the two pains had exhausted the descriptive power of my friend, and as all he could tell me about the pain with which he compared it was that he feared it was due to some carbon that had got down into his lungs, from his habit of inhaling tobacco smoke, which he has given up for many months, the pursuit of the subject did not promise any adequate return for more expenditure of time.

How do we treat these cases? Now, I have been interested in this question many years, so I am not speaking hurriedly, and I have come to be certain that in the majority of cases of uric acidity it is scarcely a matter of diet at all. But this is not the common opinion. I shall probably do this meeting no injustice when I estimate that the majority, probably the larger majority, when a man is found to be passing uric acid, look upon it as a matter of diet exclusively. I want you all to go back upon your experience, to put away all that you have read and seen through other people's spectacles, and to observe again afresh, and then to answer the question, Is it so?

While I was thinking over this address a medical man came to me about a relative, and while we were waiting or talking this gentleman introduced the subject of his own health—I think it came out in relation to the matter of the family tendencies of his relative. He told me that he was nervous, but what concerned him most was that he had "a lot of uric acid floating about in the system," as he expressed it. He had gone into the matter very thoroughly; he had read everything, had tried every remedy that had ever been suggested, and had tried all sorts of systems of treatment, and he had come to just the same conclusion as I have done—that he could not tell what determined the production or appearance of uric acid, but he did not think that he had got much help from diet.

I have notes of another patient, a most intelligent woman, who had seen many people for uric acid, and she asked me, bluntly, if I knew what led to the formation of this product, and when I said I did not know, she said that she had made careful observations on herself for some long time, and that she had come to the conclusion that it was impossible to say why the product appeared. She was certain that it had nothing to do with diet, and she was sure that in her case the catamenial period had something to do with it.

The very vagaries of its appearance are enough to make us pause and inquire into the reality of this dietetic theory. In one group it is this or that form of liquor. One man will tell you that he never can touch champagne lest he have gout, which for the most part means what we call irregular gout—that is, uric acid gravel in the urine—and various aches and pains in his fingers and toes, or in his neck or his back. In another case it is a glass of hock that is the poison (it is always a single glass, mind you), or of sherry, or of beer. With another long list of sufferers sugar is the fatal thing, or potato (I suppose because it is a typical starch). I think it can be only a small part of civilized society that ever touches a potato. It, indeed, must be a very inferior class of article to judge by the scorn which so frequently accompanies the statement, "Of course, I never touch potatoes." With others, in similar fashion, it is meats that are tabooed. "I never touch butchers' meat," is equally commonly heard; and I have sometimes wondered why the poor butcher should be so commonly conjugated with his meats in this chorus of universal disapprobation. I might, of course, go on all day, for the full enumeration of the various articles of diet that now and again have been associated in the minds of patients with uric acid; indeed, so many are they, that I often say that I have only met with two articles of diet which I have never known to be complained of, and these are toast—no! I beg its pardon, I should have said "well-torrified bread" (which is, I suppose, not toast but cinders)—and the other article is whisky.

We cut out of the diet sheet all red meat. But why only red meat? Surely it is very inconsistent to reject this alone of all the nitrogenous products which are supplied to us. Why not exclude fish and fowl and eggs and all the vegetable albumins? These things are allowed because they contain less extractives. But is this rule so universal as we make it? Emphatically no. Stomachs are very individual organs—some oh! so touchy; others wonderfully obliging. I have several times been surprised to find an individual stomach when desperately ill craving for a slice of bacon, and what is more, to have received its master's commands, obeyed them, and to have derived no hurt from its indulgence. Now, *a priori*, one would certainly think that few things could be more indigestible than the meat of bacon, because it has not by any means always been fat bacon, it has been fried bacon. And I have always supposed that the reason why so much of civilized humanity indulges in it, especially at breakfast, is because a sort of intuitive consciousness has come upon it that the stomach is more ready to cope with the indigestible at a time when it is fresh from its nocturnal rest. But if sick stomachs find themselves equal to bacon, surely it behooves us to think twice before we deprive so capable a servant of the delights of a nice piece of juicy red meat. My own opinion is that there is nothing more digestible or void of offence in any way, and, as I have said before and got hauled over the coals for it, I care not whether it be beef, or mutton, or pork, only in the latter case I should bar the attribute of redness, for reasons, however, other than digestibility. Personally, I have great doubts whether the chicken that we are all so fond of ordering to an invalid is any more digestible than mutton or beef, though as regards our present subject I suppose it may be taken as proved that it ranks lower in the scale of urea-forming products than do beef and mutton.

And then as regards vegetable albumins, what I have just said accords with my own experience, as I do not doubt that it accords with yours, for it is impossible to be otherwise than sure that in children (who are, of course, seldom large meat eaters) it is not those who are fed fully on meat who especially pass uric acid crystals; and you do no good by cutting them off all meat, as is very commonly done. Over and over again I have seen children deprived of all meat because of the passing of uric acid, and parents in a state of great anxiety, as if some dreadful disease were sapping the vitals of their offspring, but there is seldom anything to be alarmed at or that calls for any serious change in their habits of life. Such children are, I think, often pallid, pasty-looking, and usually want some little attention to their diet, in the manner in which it is eaten, and in their general hygiene, but that is all, and it is generally the better plan to increase their meat (plain cooked, roast or boiled; not beef-tea, or beef extracts, or jellies, to which parents often fly between meals in poor-looking children), make them drink more water, and diminish correspondingly the quantity of starch food taken. That is the practice which I have carried out for a long time, and I have never seen reason to regret it. Regulate the diet all round, as the late Sir William Roberts wisely said; it is not the fault so much of any special food. Children will pass uric acid even upon an excess of milk.

And I think that perhaps we can see that all this is reasonable enough if we remember what is the state of the case as regards glycosuria, for the formation of uric acid and the formation of sugar seem to me to run on somewhat parallel lines. Nothing seems more sure in medicine or physiology than this—that you may remove all the sugar from the intake and that you will still get sugar in the output. Or, to take the less precise field of clinical experience, in the glycosuria of old people you will get many a case where the exclusion of sugar from the diet seems to make very little difference as to whether sugar appears in the urine or not. I have a case of this sort vividly before my mind now. This old lady is inordinately fond of sugar, and it is impossible to keep her away from things that contain it, but it makes very little difference. Sugar is absent for long times together and then, without evident reason, it reappears. The same thing holds with the diabetes of younger folk, for although you can diminish the output very largely, the disease is yet paroxysmal or fitful, and the quantity of the output will not very accurately accord with the intake. I assert that it is exactly the same for uric acid. Over and over again have I seen people dieted up to the extreme point of misery—and if you have as yet no idea how miserable a rigid diet makes you, try it at once for a month and see; you will be a much better practitioner at the end of the month than you were at the beginning—and they were yet passing uric acid crystals almost by the spoonful.

It seems to me, therefore, clear that if you could absolutely exclude urea-forming products from the diet sheet you would yet find the human economy turning out uric acid, and although you might reduce the capital quantity in some cases, you could not do even that in everybody. In other words, uric acid is an ash, common to the many metabolic processes going on in the body. In this process, and in that of the many taking place, rearrangements of the elementary or primary combinations are constantly going on, new conjugations are formed, and the required elements are also stolen from the stockpot if they cannot be obtained from, so to speak, a legitimate current supply, by such other elements as are in a state of hunger and yearning. It is important to bear in mind, too, that there may be two opposite metabolic defects, but there is the defective metabolism of want of supply as well as the defective metabolism of excess, and you may induce a uric acid excess as well by the one as by the other.

It always seems to me that we see things in medicine far too much with the eyes of other people than with our own, and thus all treatment coming from authority tends to become stereotyped. There is surely a good illustration of this in diet sheets; you can hear it from patient after patient as they come before you. I have a diet sheet now before me for persons suffering from gravel, which has received the imprimatur of one of our most able physicians. I am willing to admit that it is not a bad one as diet sheets run, but let us look into it for a minute. And first of all it is a printed one. That, of course, means that Dick, Tom, and Harry all get the same if suffering from gravel. Can I have any stronger corroboration of my contention that gravel is made a sort of, shall I say, demoniacal possession, and that it cometh not out of us but by prayer and fasting? But I want to drive home to-night that Dick's gravel and Tom's gravel and Harry's gravel are three separate devils most probably, and that while prayer, which would, I should hope, include repentance, might be good for one and fasting for another, by the time you had arrived at your third case you certainly ought to be ordering stout and oysters or any other renovating dish that you might personally believe in. I protest with all my might against the absurdity of humanity being made to run in common grooves like this, and on such a very personal matter as the food we eat. Well, then, of course, from what I have already said, my three poor friends being afflicted with that terrible disease "the gravel" must avoid eating sugar in every shape or form. And for what reason? I suppose the compiler had in his mind that sugar goes to form glycocine, and glycocine is the material out of which uric acid is formed. Whether this be the case, whether this be even a fair statement of the case, I will not be sure, for I am professedly treating the question from the standpoint of every-day practice only; but if it be so I should still hold that, after all, sugar is not a poison, and this wholesale condemnation of a wholesome article of food can hardly be other than a fad. By all means cut off sugar on good reason shown for this or that individual; but I know this, that there is many a gravelly one who can take sugar in moderation as an article of food and not be a bit the worse for it. Nay, more, there are some of the "gravelly" who cannot do without sugar. "Oh, let me have a little sweet," as my patient said. I see it stated in the life of Sir John E. Millais that Rogers the poet took a parental interest in him, and that he used to say to his footman, "Put three lumps of sugar into Mr. Millais's tea," when poor Mr. Millais visited him; "he ought to like sugar, he is too thin." Rogers, although eccentric, was a wise man; and oh! my hearers, those of you to whom this appeal comes home, do reflect that there are some of us who triumph over old age in our liking for sugar, and why have you got your knife into it so? Let me tell you in your own interest that if ever you are called in to attend me, and you cut me off my sugar, I will promptly go and see a consulting physician without telling you, and come back and call in your most bitter rival. What more can I say to show how strongly I feel on this excellent food-stuff?

I see that fat stands next on this list of "dreadfuls," and for the same reason, I suppose, its glycocinic leanings, but the wisdom of this exclusion seems to me to be canceled by the allowance of butter in the "may eat," and the exclusion of cream among the drinks. And here I am in for another crusade. I am not exaggerating in the least when I say that people come into my room one after the other to tell me that their medical attendant has told them never to touch fat. There can be no doubt about it that there is a routine order abroad never to touch this material. I will not say that it is specially to persons who pass uric acid that it is given—it is mostly to those who are said to suffer from their liver. Well, we are each of us entitled to our own opinion, and I do not want to tread roughly upon the cherished opinions of any one; all I want to be sure of is that they are your own opinions and not those of some, perhaps brilliant, teacher passed on and assimilated without correction by your own thought and experience. But even then I want you to think the matter over once more and to give it another trial. And when the next poor sufferer, with, perhaps, a liver, or what not, tells you that he never takes fat, and that cream would make him bilious, just gently murmur that even infants can digest cream easily and that it is really a most excellent food for the liver. And so it is, and so is good olive oil, but it generally happens that when I order it, as I often do—for it is much more palatable than cod-liver oil—and by the bye it is a funny thing that when the liver depends so much for its substance on fat that all fat should be taken from the food in case the liver should be upset—whenever I order it, I say, the patient holds up his hands in horror at the suggestion because his medical attendant has forbidden it. There are several other articles excluded that cause me much wonder; such are herrings and eels (the latter being one of the most tender and delicate of foods if properly cooked), but I must pass on to my third crusade, and this has to do with the "may drink."

Now in this list there is nothing to take exception to, except that it is not hinted that it is at least possible that the person who passes gravel may be the better without any alcoholic beverage. He is told that he may have a little light wine—Moselle, Hock, Chablis, Sauterne, or cider in small quantities. But in ordering, or rather permitting, light wines and nothing else, this diet sheet surely does not follow the usual routine of the profession. As a rule, the profession forbids all wines of every sort and tells the patient to drink whisky. And as I have said before, although often professing the greatest possible dislike to it, he yet drinks it with astonishing facility. There can be no possible mistake about this. I have had ample opportunities of forming an opinion and I say that people hardly ever drink beer now; they are frightened at nearly all wines; so that they run like sheep after the last new white wine that the fashionable medical man of the time orders them, and most of them eventually discard all wines and take—on the whole and with few exceptions—very complacently to whisky. Again I ask, Can a routine treatment of this kind, a routine prescription which I am persuaded must often come tumbling out of the mouth of the prescriber without any thought, be fitted to Dick and Tom and Harry indiscriminately?

What can there be of harm in a glass of good light wine or in a glass of light beer that is not present, only more so, in spirits? Mind, I am not holding a brief for either the one or the other, but I am quite sure that if a man requires any stimulant at all—a matter he must decide by experiment for himself, for I maintain that no medical man can tell him—he will often be the better for a glass of wine than he will be for the now commonly substituted whisky. And in nothing more than this does the question of the individuality of disease come in. What a man drinks, if he passes uric acid, is, in my opinion, a much more important matter than what he eats. A large number of those suffering from acidity had better take no alcoholic liquor of any kind; others are better for some. It should always be a most moderate quantity. To many champagne seems to be a poison, to others it is the most wholesome wine, and they drink it year after year and do well upon it. Some, again, do well upon port, although this is an exceptional thing, but claret and the lighter wines are the more generally useful. I do not think there can be any doubt that there are some who cannot digest wine and yet who do require some little stimulant to get through their work, and for these whisky or brandy well diluted comes in as a valuable help. I am not objecting at all to its well-considered use in such cases as these; what I am objecting to is that a glass of good wine should be so universally discarded and ever so much more alcohol taken in the shape of whisky. And moreover, this prescription of the medical man is changing the habits of the people. We used to drink beer, we now drink whisky; and I am sorry to say that this is the case with the young men as well as the old. The young men in our large towns will often confess to three or four glasses of this strong and, to them, poisonous drink in the course of the day without having the least idea of the harm that is accruing to them. And I think we medical men are largely responsible for this state of things. We tell everybody to drink whisky. A well-known medical man in Brussels came to see me the other day and he was asking about his drinks. He told me that he had got some very good wine, but that he found over here that we all ordered whisky and that it was whisky everywhere. Even the waiters at hotels and dinner-parties brought you a whisky-and-soda almost before you had asked for it. And he was not far from the truth. People are told to drink whisky because, forsooth, it is the purest spirit, and young and old are drinking it. My idea about drinks is, first consider whether you would not be better without anything and, that decided in the negative, then let the young man drink his beer, the middle-aged his wine, and the old man his toddy. I am, of course, talking of the daily habit. An occasional glass of anything hurts nobody, even if it should make one think he has a pain in his great toe on the next morning.

Thus far it will have been gathered from what I have said that uric acid is not a product to be eliminated so much as to be prevented, but the results of sending patients to foreign spas are often striking and would seem to traverse my contention. You send a man to Contrexeville, for instance, and he passes large quantities of uric acid while there, and he comes back feeling light as air. Far be it from me to deny the benefit that is often obtained at such places, I send too many away on errands of this kind to so belittle mine own honesty. But before accepting straight off the explanation that the uric acid is extracted as a matter of depuration from the blood or tissues, a philosophical inquiry must at least consider the possibility of other causes. Years ago I remember paying a visit with a friend to some aniline dye works, and there I saw that, amid abounding commercial prosperity, the manufacturer was overwhelmed with pitch. And here also it is possible—I pray that the magicians of hydrotherapy may forgive me for such a heresy—it is possible that, like other by-products of commercial success, uric acid may be manufactured on the premises, so to speak, and that there are specimens of it that ought to be labeled "Made in France" or "Made in Germany." In the daily manipulations of many urines, year after year, I have often been struck by the sensitiveness that this fluid displays to the addition of foreign constituents. There is many a man, for instance, who notices that he is passing uric acid because he happens to micturate into some cold urine or perhaps passes urine of one specific gravity into urine of another specific gravity; a specimen of this kind in a nervous observant man might easily lead him to suppose that he was risking the formation of stone in the kidney or bladder and that it was necessary to undergo a course of treatment for it, but I am sure that it is passed in solution, and I am indebted to Dr. Luff's most interesting and instructive Goulstonian Lectures on the Chemistry and Pathology of Gout for what seems to me the probable explanation of the phenomenon. Dr. Bence Jones, he writes, was the first to show that the amorphous urate deposit yielded to water a soluble moiety consisting of true biurate and left a sediment consisting of pure uric acid.[1] Winter work gives one quite a different view of urines from that given by summer work. It is one of the small bothers of work in cold weather that materials crystallize out so much more readily and thus convey false impressions, and this both with and without reagents. It is one of the drawbacks of the ferro-cyanide test for albumin that the preliminary acidification with citric acid so often clouds the fluid with an amorphous deposit and which does not always readily clear with heat, as it is said it always does. I think that it is possible, too, that mucus in the urine has something to do with this sensitiveness or otherwise to reagents and I have always thought that Dr. W. M. Ord's observations upon the role of mucus in the formation of urinary calculi are of great clinical interest.

But to return to waters and their effect upon uric acid. I have often been struck, as many of you must have been, and amused besides, with the fact that the medical men at spas almost invariably say to their patients, "The good does not come at once; you may even be worse before you are better; you must await the 'bye-and-bye,' and you will require to come again for two or three years to get the full benefit of our waters." Yes, these gentlemen have the most canny way of eating their cake and having it. Nevertheless, what they say is true. We all know that it frequently happens that a man goes to waters to get rid of his uric acid and he has a bad attack of gout directly his course is over, or mayhap when it is half through. I have been told by those who have been at Contrexeville that they have passed, not uric acid but oxalates; some, as I have already noted, have passed phosphates, and it is also the fact that the first effect of the waters is to reduce one to a state of absolute limpness and enervation. It is most difficult to understand this if there be any real depuration. This, one would suppose, should start and go on progressively. But it is not so; many patients are at first much deranged in their digestion by the treatment, and are, I should say, in the very ideal condition for making and passing a good output of uric acid.

---

[1] The Pathology of Gout, p. 85.

Then, too, some of the uric acid that is passed is probably washed or dissolved out of the passages. There is nothing more common in the post-mortem room than to see the kidney studded over with minute deposits of uric acid, and I am firmly convinced—for I think I have seen evidence of it clinically—that free-water drinking performs an even more difficult task than that of flushing out sand from the passages, viz., that it softens and disintegrates small calculi. I daresay that we have some of us seen small calculi passed after this treatment has been perseveringly adopted, and I once made a post-mortem examination in a case that had been undergoing this treatment, and the stone was found soft and sabulous, so that it could be crushed to powder under the finger. To be fair, I suppose it is possible that the unbeliever might say that the stone was in course of formation, not of softening, but I think the probabilities were the other way. This point is surely worth insisting upon in these days of energetic surgery. Not long ago a friend of mine came to me with well-marked renal colic. I put him on the water cure and told him to drink it for some months, but he was a nervous, plucky, excitable fellow, and as his attacks of pain recurred he decided to be cut. He was cut and no stone was found, and three or four days after he passed his stone per vias naturales.

There are, of course, other most important conditions to be considered in estimating the value of water proper—for instance, what a Turkish bath does, with the delicious sense of languor that follows it and the brightness and freshness that come after: this is often exactly reproduced by a course of waters. Then there is the change of scene, of climate, and of diet. These are very important factors, but they are on the surface, and I need not dwell on them. And while I am on the subject of water-drinking it may not be inapposite to say that the question of hard or soft water if taken freely is probably not an unimportant matter to the standard of health. There is a common belief abroad, I think, that hard drinking waters are detrimental to health, and I am very much inclined to take that view myself. But unfortunately it is one of those questions, like that of climate, which are exceedingly difficult to obtain precise facts about. Still, if it be true, as many think, and the history of goiter seems to prove, that there are dangers in the habitual use of hard waters, it at any rate may go to suggest that copious libations of any waters impregnated with saline products may possibly also lead to detrimental results from too indiscriminate use.

But I must be drawing to a close. In doing so, let me summarize a little, for I fear that my thoughts have tumbled out somewhat disjointedly. My contention is that uric acid is a common product that may well be considered as the ash resulting from the workings of our many-chambered kiln, and that the fault, if fault there be, lies not in the ash, or even in the coal from which it is produced, but in the driver, or in this case the driving power, that should regulate the process of combustion. And though this sounds vague, as indeed in the present state of our knowledge it is, it does not necessarily follow that it is any the less true. The uric acid passer invariably presents to you a problem to be unraveled, and each case a problem more or less distinct and separate from every other. In one case the cause may be the visceral sluggishness that is the common outcome of nervous exhaustion; in another, the hereditary condition, whatever it be, that determines gout, and which certainly works out its mission independently of any dietetic indiscretions, for how often we hear the lament from such, "Well, I never earned it." In another it may be a great or sudden shock, a great anxiety, an exhausting attack of illness; in another some early defect of the kidney; in another case perhaps all we can say is that it appears to be the first indication of the growing old, and of the failure of the organism to accommodate itself sufficiently rapidly to various changes of its environment, whether they be climatic or dietetic or what not, which is one of the chief distinctions between healthy youth and age. These are the things that determine the verve of our several organs, and these, therefore, are the prime movers in the production of uric acid. No doubt all these things are wanting in precision and tangibility, but they are none the less the causes of disease. To wash out a mere chemical product might seem a much easier matter and what is called a good working hypothesis, but what about results? Well, there we shall no doubt agree to differ. For myself, I cannot but think that had it not been for our eagerness to get hold of something to "treat," the uric acid theory that is dominant at the present day would never have become the fetish that it has.

One of the weaknesses of our profession is this, that we incline to do too much, and in so doing over-treat disease. It is our virtue rather than our fault, for if there be any vice from which as a profession we are free it is that of the mercenary spirit, and this in spite of a certain letter that appeared in the *Times* lately. But, as you all know, the public will have physic for every ailment. We are eager to cure disease as quickly as possible, and so we often come to look too anxiously upon what are hardly more than physiological deflexions. I have often thought that we might with advantage cull a leaf out of the book of clerical customs and from time to time go into "retreat" as they call it. We might then have time to pause in the treatment of detail and to take a broad survey, each of us, of the teachings of our own experience.

PITHY, PUNGENT AND POINTED PARAGRAPHS,

REPRINTED FOR THE PERUSAL OF PHYSICIANS WHOSE
PARTICULAR PENCHANT IS PERTINENT PROSE.

ON THE FREE USE OF DRINKING-WATER IN ACUTE HEMORRHAGE. —Louis Kolipnski says that the prime indication in the treatment of acute hemorrhage, after the temporary or permanent closure of the bleeding vessels, is to refill the vascular septum with its normal fluid without delay. A plan which yields brilliant results is the very liberal exhibition of drinking-water. He cites the case of a girl, aged eighteen years, suffering from typhoid hemorrhage, who drank twenty-four tumblers of water in one night. The next morning the patient had revived completely and her radial pulse was strong at 108 beats per minute. Cold poultice treatment was also used.—*Maryland Medical Journal*, December 30, 1899.

DEFORMITY FOLLOWING EXCISION OF THE KNEE.—Henry Ling Taylor says the knee of a child should practically never be excised for ostitis. Excessive shortening often follows from destruction of the epiphyseal junction, and there is often recurrence of deformity from failure to get bony union. Opening and washing out, with erasion when necessary, will preserve the epiphyseal line.—*Pediatrics*, December 15, 1899.

INCIPIENT INSANITY.—J. Outterson Wood says that some of the most distressing cases of uncertifiable mental disorder are those in which the patient, although otherwise sane, is tormented by "horrid thoughts." There is danger of a breakdown of mental control and the development of an impulse which may end in disaster. The general health should be improved, insomnia overcome by twenty grains of sulphonal on alternate nights, indigestion carefully treated, and cheerful surroundings provided for the patient, or some new and healthful outside elements introduced into the family. A nervine tonic may be given, and hypnotic treatment is sometimes of value.—*Treatment*, December 14, 1899.

CASES OF BULLOUS ERUPTION OF UNDETERMINED NATURE.—T. Colcott Fox relates an unusual instance of bullous eruption affecting the entire body in a woman aged thirty-six years, which differed from pemphigus in commencing as inflammatory nodules of considerable size, which rapidly became vesicular and the contents blood-stained.

The patient steadily lost ground and died. The total duration of the eruption was nine weeks. After rupture of the bullæ there were ulcerations which spread as in phagedæna. The first suspicion was that the affection was due to iodide of potassium, but no history could be obtained that this drug had been taken. Another theory was based upon the possibility of glanders infection.—*British Journal of Dermatology*, December, 1899.

THE OFFSPRING OF CONGENITAL SYPHILITICS.—George Pernit relates the history of a congenitally syphilitic mother who, out of seven pregnancies, gave birth to only one living child at full term. This boy was a weakling who showed no actual signs of syphilis. The father, although blind, could not be made out to be syphilitic. The mother showed unmistakable signs of congenital syphilis.—*British Journal of Dermatology*, December, 1899.

EXTRA-GENITAL CHANCRE.—W. T. Freeman records an instance of chancre upon the outer side of the right gum in a girl sixteen years. It was not known how long the ulcer had existed. There was some swelling of the submaxillary gland, but it was not noticeably hard. A consultation on admission to the hospital confirmed the diagnosis. The ulcer steadily healed under mercurial treatment. An erythematous rash subsequently developed.—*British Journal of Dermatology*, December, 1899.

PAIN-ENDURING ANIMALS.—The manner in which animals and birds endure pain, says a writer in a popular magazine, should awaken the sympathy of all thinking people. Horses in battle furnish a striking example of this power of endurance. After the first stinging pain is felt they make no sound, but bear it with mute wondering endurance, and when in the silence of the night a groan comes from the battlefield it is because of loneliness—the craving for human companionship which is so necessary to once domesticated animals. A dog will go for days with a broken leg without complaint, but the pleading, wistful look would attract attention from any one not totally blind to all sensibility. A cat wounded by stick or stone, or caught in some trap from which it has either gnawed or pulled its way, will crawl to some quiet, out-of-the-way place and endure silent agony which we could not endure. Cattle will meet the thrust of the butcher's knife without a sound. The wild dove with shot from the hunter's gun burning in its tender flesh will fly to some high bough or lie upon the ground and die, and no sound will be heard, save the dripping of blood upon the leaves. The stricken deer will speed to some thick wood and there in pitiful submission await the end. The eagle stricken in high air will struggle to the last, but there will be no sound of pain, and the proud, defiant look will not leave the eyes until the lids close over them and shut out the sunlight they loved so well.—*Western Druggist.*

MASSAGE OF THE ABDOMEN IN DEFICIENT LACTEAL SECRETION.

Schein lauds massage of the abdomen to increase a deficient lacteal secretion. It should be practised daily for half an hour, or an hour, the movements being made upward from the pelvis to the breasts. With this may be associated massage of the breasts themselves. Schien's explanation is that the function of the mammary glands is intimately connected with the amount of blood brought to these glands from the genital organs by means of the vessels of the abdominal walls.—*Journal Med. de Paris.*

THE RELATION OF MIGRAINE TO EPILEPSY.

W. G. Spiller (*American Journal of the Medical Sciences,* December, 1899) from his observations on this subject draws the following conclusions:

1. Attacks of migraine occur associated with nausea and vomiting; this form is known as simple migraine, and usually remains unaltered during the life of the patient.

2. In other cases visual disturbances (hemianopsia, scintillating scotoma, amaurosis, etc.) are associated with the migraine, and the disease is then known as ophthalmic migraine.

3. When paralysis of the ocular muscles occurs with the migraine, the disease is described as ophthalmoplegic migraine.

4. Migraine, especially the ophthalmic form, is related to epilepsy, and the attacks of migraine may precede for many years the convulsive attacks of epilepsy, although in most cases of migraine no convulsions are ever detected.

5. In some cases epilepsy appears in the form of one or more of the disturbances seen occasionally with migraine, and later, even after many years, convulsions develop. The disease may be epilepsy from the beginning. It matters little, with our uncertain knowledge of the pathology of the two diseases, whether we regard these as abortive cases (forms frustes) of migraine that later become associated with epilepsy, or as abortive forms of epilepsy (sensory epilepsy), in which the convulsions later become apparent, provided we recognize a relation between some forms of migraine and epilepsy.

NOTICE.

The sixteenth annual meeting of the Fifth District Branch of the New York State Medical Association will be held in Brooklyn on Tuesday, May 12, 1900. It is proposed to choose Diabetes as the topic for discussion. Fellows who are particularly interested in this topic and have any clinical data to present or theories to offer will kindly correspond with the undersigned.

J. C. BIERWIRTH, President.

BOOK REVIEWS.

SAUNDERS' AMERICAN YEAR-BOOK OF MEDICINE AND SURGERY.

In two volumes—no increase in price. In response to a wide-spread demand from the medical profession, the publisher of the "American Year-Book of Medicine and Surgery" has decided to issue that well-known work in two volumes, Vol. I treating of General Medicine, Vol. II of General Surgery. Each volume will be complete in itself, and the work will be sold either separately or in sets. Price per volume: Cloth, $3.00 net; half Morocco, $3.75 net. The quantity of matter under review has become so immense that its inclusion in one volume would make a book of unwieldy proportions; but by thus dividing the matter, two volumes will be made of about 600 pages each—an ideal size for convenience of handling and reference. Each volume will be complete in itself, will be paged separately, and will have its own index. This arrangement has a two-fold advantage. To the physician who uses the entire book, it offers an increased amount of matter in the most convenient form for easy consultation, and without any increase in price; while the man who wants either the medical or the surgical section alone secures the complete consideration of his branch without the necessity of purchasing matter for which he has no use. W. B. Saunders, 925 Walnut street, Philadelphia.

HISTOLOGY AND PATHOLOGY. By John B. Nichols, M.D., Demonstrator of Histology, Medical Department Columbian University, and F. P. Vale, M.D., Assistant in Pathology, Medical Department University of Georgetown, Washington, D. C. In one handsome 12mo volume of 452 pages, with 213 illustrations. Cloth, $1.75 net. Flexible red leather, $2.25 net. Lea Brothers & Co., Philadelphia and New York.

This volume presents compactly, clearly, authoritatively and at a very moderate price, the essentials of two important subjects which illuminate each other. The normal structure of the tissues is a standard by which morbid changes can be recognized and measured. Pathology steps in after histology, and regarding each disease as an entity, describes its nature, signs, course and effects, thus yielding an understanding indispensable as a prerequisite to the practice of medicine. Drs. Nichols and Vale have summarized these two sciences in their inter-relations, and have presented a manual which is handsomely illustrated, thoroughly up-to-date, and serviceable alike to the practitioner and the student.

GENERAL AND LOCAL ANESTHESIA. By Aimé Paul Heineck, M.D., Clinical Instructor in Genito-Urinary Diseases, College of Physicians and Surgeons, Chicago; Clinical Instructor in Gynecology, Chicago Clinical School; Clinical Instructor in Surgery, Northwestern University Woman's Medical College. 124 pages, $1.00. G. P. Engelhard & Co., Publishers, 358-362 Dearborn St., Chicago.

The topics include the uses of Chloroform and Ether; the use of Anesthetics in childbirth; Anesthetics for Diagnostic and Therapeutic Purposes; Anesthetics in Surgery; Selection of the Anesthetic, etc.

GAILLARD'S MEDICAL JOURNAL.

A MONTHLY JOURNAL OF MEDICINE AND SURGERY

Scientia et Veritas Sine Timore.

PUBLISHED BY THE NEW YORK MEDICAL PUBLISHING CO.,
106 William Street, NEW YORK.

EDITORIAL.

"STROKE the dog, but beware of his bite." We recently took occasion to speak of the great value of antipyretics of synthetic origin. We feel quite sure that we voice the opinion of fully 90 per cent. of the regular medical profession when we say that the apyretic drugs of coal tar derivation are markedly preferable to plant drugs, not only because they can be used without any danger to the patient, but also owing to the fact that they act far more promptly.

We now wish to caution our readers against the too free use of antipyretics of all kinds.

Careful observation has established the fact that pyrexia is frequently a favorable condition, that it is a protective measure of nature and that the rapid reduction of fever is not infrequently a direct injury to the patient.

The most eminent clinicians of both hemispheres maintain that the fever of pneumonia should be left severely alone under ordinary circumstances, that more patients die with a temperature of 103 than a temperature of 104, and it is a matter of common knowledge that tubercle bacilli are less influential when the bodily temperature is above normal.

The custom of prescribing an antipyretic, no matter whether it be acetanilid, quinine, phenacetin, or a salicylate, the moment the fever makes its appearance, is disgusting to the intelligent student of medicine.

Drugs that are capable of lessening the production of heat, increasing its dispersion, or in any other way effecting a reduction of the bodily temperature, are pretty apt to disguise conditions which should have the physician's best attention.

No man ever died from excessive fever heat per se, but many men die from the disease of which fever is the only symptom treated, consequently it is the physician's duty to deal as sparingly as possible with agents which may deceive him regarding his patient's actual condition.

We might say that a mixture of brains and antipyretics is a good prescription, but, "if you give me a knife, give me a fork, too."

A SUBJECT which should be of vital interest to every practitioner, and one which seems to receive but a small part of the attention it deserves, is constipation.

We do not refer to habitual infrequency so much as we do to insufficient evacuation and consequent retention and absorption of effete products—auto-intoxication, characterized by headache, indigestion, languor, depression, anæmia, etc.

It has been contended by many writers that the extensive exploitation of quack nostrums tends to lead to an excess in their use by the laity, but notwithstanding the fact that the consumption of purgative pills is enormous, it cannot be denied that we are a constipated people.

In the treatment of constipation the physician should look for the cause and while symptomatic treatment is at times necessary, it is highly important that the cause be traced and properly remedied.

Indiscretion in diet and inactivity of our people are the chief causes of the widespread constipation, and unless attention be given to these factors, complete cure will be the exception rather than the rule. The cathartic-taking habit so frequently met with is doubtless due to the fact that no attempt is made to correct the actual cause.

The man whose lower bowel is distended with feces and putrefactive gases is sick; he may not know it, but he is, and furthermore, he needs something better than a pill doctor.

GAILLARD'S MEDICAL JOURNAL.

VOL. LXXII. NEW YORK, MARCH, 1900. NO. 3.

ACUTE INFLAMMATION OF THE MIDDLE EAR COMPLICATING SCARLET FEVER AND MEASLES.*

By CHARLES H. MAY, M.D., New York.
Chief-of-Clinic, Eye Department, Vanderbilt Clinic; Instructor in Ophthalmology College of Physicians and Surgeons, Medical Department of Columbia University, New York; Assistant Ophthalmic and Aural Surgeon, Mt. Sinai Hospital, New York; Professor of Diseases of the Eye and Ear, College of Physicians and Surgeons, Boston, Mass., etc.

In a paper on "Scarlatinous Otitis," which the writer read before the Pediatric Section of the Academy of Medicine, in March, 1889 (*American Journal of Obstetrics,* April, 1889), statistics of more than 5,000 cases were presented to show that 10 per cent. of all deaf persons owed their affliction to an aural complication of scarlatina. During the intervening decade our treatment has not changed to any marked degree, but, fortunately, its adoption in the early stages of the otitis complicating scarlet fever and measles has become more general; as a result there has been some diminution in the number of patients who present diseases of the ear following these exanthemata.

Though measles and scarlet fever are combined for discussion in this paper, it is the latter disease which is entitled to the bulk of consideration. Otitis complicates measles less frequently than it does scarlet fever; furthermore, when a complication of measles, it is more apt to be catarrhal in form and mild in course.

Aural complications occur in about 20 per cent. of all cases of scarlatina. In the paper above referred to, written in 1889, the percentage is given as from 22 to 33. In the Willard Parker Hospital there were 575 cases of scarlet fever from January 1, 1898, to May 1, 1899. Among these 575 cases, there were 96 with aural complication less than 17 per cent. The frequency varies in different years and in different epidemics, being great at certain times and less common at others; it is greater during the colder months than during summer. In a general way, otitis is more common in severe forms of scarlatina than in mild cases; but to this statement there are exceptions. The intensity of the aural inflammation usually bears some relationship to the severity of the attack of scarlatina; but this again cannot be regarded as an invariable rule.

---

*Read before the Pediatric Section, New York Academy of Medicine, May 11, 1899.

Exactly as when occurring under other circumstances, the acute otitis of scarlet fever and measles can be divided into two forms:

1. Inflammation of the *catarrhal type*, in which the secretion and discharge are mucous or sero-mucous, often containing a small number of pus cells, and in which there is comparatively little direct damage to the contents of the tympanum and its walls; and

2. The *purulent form*, in which the secretion and discharge are distinctly purulent or muco-purulent, and there is always more or less destruction of the contents of the tympanic cavity and often of its walls.

In the first class of cases (catarrhal), the symptoms are milder than in the second But this it not always the case; examples of the catarrhal type may present very severe symptoms, while some of the purulent cases run a course of light or moderate intensity. But the distinction in regard to the tendency to destruction of tissue is a constant one, and it is important that this fact be emphasized. It must also be remembered that an otitis may begin as a catarrhal inflammation and, before or after perforation of the drum membrane, may change to the purulent form. Clinically it is often impossible to differentiate between the two forms with any degree of certainty until after perforation, although, as will be mentioned later, there are some variations in symptoms which point to the existence of either type.

There is very good reason for believing that the difference in the character of the inflammation depends upon the nature of the infection—the micro-organisms which seem responsible for the invasion of the tympanum. Streptococci, staphylococci, pneumococci, and other micro-organisms have been found in the discharge. But a sufficient number of bacteriological examinations have not yet been made to give us exact knowledge in this direction. Perhaps after further research we may be able to divide cases of otitis according to the particular micro-organism which preponderates in the secretion and discharge. The streptococcus seems likely to be responsible for the infection in the very severe forms of acute purulent otitis. Probably the majority of cases of otitis, which occur with measles, are of the catarrhal type, while in scarlet fever the greater number are of the purulent variety.

Otitis usually occurs near the end of the first week of scarlet fever, less frequently earlier or later in the disease; in measles it is apt to begin earlier. The complication results from an extension of the inflammation of the throat and nose through the Eustachian tube; hence its severity generally corresponds to that of the throat symptoms. This is not, however, always the case. Cases of scarlatina have been recorded in which all symptoms were so light as to leave some doubt regarding the diagnosis; after some days there was an otitis which strengthened the diagnosis, and later the occurrence of desquamation made it certain.

The fact that the aural complication most often begins at the end of the first week aids us in an early diagnosis, since at this period the fever has partially or completely subsided; a rise in temperature and increase in constitutional symptoms then excite suspicion of some complication. It is different in the more unusual instances in which the otitis occurs earlier, when the symptoms of scarlatina at their height may mask those of the ear complication.

The otitis is very frequently bilateral; but at a given time the two sides will usually present different stages of progress; the second ear is apt to become involved one or more days after the commencement of the symptoms in the first. The records of the Willard Parker Hospital show that out of 96 cases 30 were bilateral, 40 affected the left ear, and 26 the right ear.

The advent of the aural complication is commonly announced by a rise of temperature, averaging 102° or 103°, sometimes higher, and the attendant symptoms of fever—rapid pulse, constipation, headache, restlessness, anorexia and thirst; occasionally there is repeated vomiting, delirium, and sometimes convulsions; in older children there may be chills or chilly feeling.

The patient, if old enough, will complain of intense pain referred to the depth of the ear and often radiating in the direction of the various branches of the fifth nerve. A feeling of fulness and throbbing, various noises, more or less deafness, and sometimes dizziness are present. The pain is either dull or lancinating in character, deep-seated and frequently excruciating. It may, however, be slight or even absent. All these symptoms are continuous, but are much worse at night.

In children who are too young to give up such subjective information, besides the constitutional symptoms already mentioned, our suspicions will be excited by the fact that the hand is placed on the affected ear or on the corresponding side of the head, which the child may also roll into the pillow; some authorities, however, assert that the affected side is kept away from the pillow.

Examination of the drum membrane will give a characteristic picture. At an early stage there will be more or less redness—from a faint pink to a dull red; this discoloration may be either general or confined to one part of the membrane. When limited to the upper part (Schrapnell's membrane), the inflammation is likely to be purulent in form and severe in type. When such limitation occurs, it aids us in arriving at the conclusion that we are dealing with a purulent and not a catarrhal otitis media; other signs which point in the same direction are marked constitutional and local symptoms, and later, perforation of the membrane and the escape of pus; in the catarrhal cases the redness is more apt to be diffuse, the constitutional and local symptoms less severe, and quite a number of cases run their course without perforating. The drum membrane may be covered by a desquamating layer of epithelium of grayish color, which it will be necessary to remove with cotton upon a probe before the redness of the membrane becomes visible.

In the early stage of many of the cases, however, it will be absolutely impossible to say whether the otitis is going to assume the catarrhal or the purulent form, whether it will be mild or severe. Fortunately, as far as treatment is concerned, it is unnecessary to arrive at any definite conclusion in this direction.

Soon there is added more or less bulging, either involving the entire drum membrane or a greater part of it; in some cases the bulging is limited to the posterior portion; in others to the upper part or the postero-superior quadrant; in the last two situations we will suspect a severe form and a purulent type of inflammation. When the bulging is general it usually destroys all landmarks of the drum membrane except the short process of the malleus. Certain additional evidences of the exudation in the tympanum occasionally present themselves. It sometimes happens that we can note the level of the secretion in the tympanum or that a yellowish or greenish-yellow discoloration indicates the existence of pus in this cavity.

During the early stage of the inflammation it is possible for resolution to set in, the products escaping through the Eustachian tube; this will be more apt to occur in the catarrhal variety; it has never been demonstrated that a purulent secretion has obtained any other outlet from the middle ear than through an opening in the drum membrane. As a matter of fact, except in mild cases of the catarrhal type, such a fortunate ending is very unusual. The pent-up secretion forces an outlet through the membrane, and rupture takes place. This perforation usually occurs in the posterior part of the membrane, less frequently in other parts; it may occur in any portion.

With the escape of the secretion the symptoms usually subside; but it is not uncommon to have an elevation of temperature persist for a day or two. If the case be mild and catarrhal, the perforation soon closes, and there is recovery without damage to the ear; in some of these cases, however, after perforation, the character of the inflammation changes and a chronic purulent inflammation of the middle ear results; less frequently a chronic catarrhal otitis media is the sequel. If the inflammation be of the purulent form, the discharge may cease, the opening close, and useful and even perfect hearing remain, notwithstanding the fact that more or less damage to the contents of the tympanum results in every case of this sort. But after spontaneous perforation of the drum membrane the majority of patients are less fortunate. In many of these the acute changes to a chronic process, the discharge continues, and with it the destructive process which is responsible for it, the perforation shows no tendency to heal, and a condition is presented which constitutes the so-called "running ear"—a chronic purulent inflammation of the middle ear with perforation, more or less sloughing of the lining of the tympanum, caries of the ossicles and bony walls. Such a sequel constitutes a serious condition on account of the impairment of function, the necessity of long-continued, tedious and patient treatment, and the menace to the health and even the life of the patient through extension of the inflammation to the mastoid and the meninges, and the danger of cerebral abscess and thrombosis.

In many cases, the spontaneous opening in the drum membrane will be small in size and entirely insufficient to allow evacuation of the middle ear; then after a short period of improvement the symptoms will continue and the perforation will close.

The treatment of otitis complicating scarlet fever and measles may be divided into (1) *Preventive*, the care of the nose and throat so to diminish the risk of extension to the tube and middle ear; (2) *Abortive*, the management of the early stages for the purpose of causing resolution without perforation, and (3) *Paracentesis* of the drum membrane, in cases in which the abortive treatment has been unsuccessful.

In regard to the *prevention* of this complication, there is no dobut that attention to the nose and throat has some restraining influence upon the tendency of the inflammation to spread from these parts to the ear. The nose and throat should be kept as clean as possible. Very few children have been taught how to cleanse the nose properly, and even adults are usually ignorant in this respect. To properly cleanse the nose, the nostril of one side should be compressed so that the entire force of the expiratory effort is expended upon the opposite, free, nasal passage. In this way secretions are readily expelled from the nose, and the force of the column of air is not scattered through the nose throat, tubes and middle ears, as happens when we apply the handkerchief in the customary but improper method. In the diseases under discussion the patients are usually unable to cleanse the nose and throat, and must be assisted in the performance of this important process. The writer prefers swabbing for this purpose. A solution of sodium chloride, three-quarters of one per cent., answers as well as anything. Or any weak cleansing or antiseptic solution may be used, preferably warmed. Such a solution is applied upon cotton on a straight applicator for the nose and a bent one for the throat.

As soon as there are evidences of aural complication the *abortive treatment* should be begun. Absolute rest is of the greatest importance, and must be secured under all circumstances; a sufficient amount of an opiate to produce sleep should be administered or some other sedative may be given. The writer is in the habit of prescribing acetanilid and caffein to relieve the pain, and has been well satisfied with the results. Evacuation of the bowels, light diet, proper temperature of the room and the avoidance of draughts of cold air will probably have been looked after as part of the treatment of the original disease, and hence need merely be mentioned.

Dry heat should be employed by means of a hot-water bag, upon which the affected ear is allowed to rest; poultices are not desirable. Another means of controlling the pain and acting favorably upon the course of the inflammation is the use of hot water, allowed to run into the canal, and in this way to exert its influence upon the drum membrane. The temperature of the water should be 115° F., and it is customary to dissolve a teaspoonful of sodium chloride or of boric acid in each pint. It can be applied in one of two ways: A very convenient and rapid method is to warm the water in a tablespoon and to pour it into the canal, repeating the procedure every few minutes until the pain has subsided or become bearable; another plan is to allow the warm solution to flow into the canal of the ear from a fountain syringe, being careful that the bag is held just high enough for the water to escape, thus avoiding unnecessary force and pressure.

Local abstraction of blood is indicated and often relieves. This is accomplished by two leeches placed upon the region immediately in front of the tragus; or the artificial leech, either that of Heurteloupe or the scarificator and cup of Bacon may be applied in this situation, and about an ounce of blood abstracted.

A great deal has been written in favor of and against inflation in the early stage of middle-ear inflammation. The writer is an advocate of inflation, preferably by means of the catheter; but when this is impossible, by the Politzer method. He has never seen any harm result from this procedure, and it is certainly productive of favorable action in a number of cases. *But it must be used properly.* The nose and throat must receive a thorough preliminary cleansing, and inflation must be practiced very *gently.* It is difficult to pass the catheter in a child, but it can be done with care and patience, and the plan certainly has advantages over inflation by the Politzer method.

Combined with inflation, the writer is in the habit of employing *suction of the tube and tympanum.* This addition seems so simple that he hesitates to claim any originality for the method; yet he has never seen it described nor heard of its being used by others. It has given excellent results in this stage of otitis.

Suction of the tube and tympanum consists in the employment of a current of air in the reverse direction to that used in inflation. After the catheter has been introduced and the middle ear inflated, the finger is placed upon the valve of the bag while in a compressed condition. The elasticity of the rubber tends to cause the bag to assume its original shape, and since no air can enter through the valve, a suction force is generated. If the finger be kept on the valve constantly no progress is made, since the suction causes the walls of the tube to collapse. But by allowing a little air to enter the bag by releasing the finger for a moment, again applying the finger, and continuing this alternately, the contents of the tube and tympanum tend to be drawn towards the catheter. Even when the catheter cannot be inserted, suction may still be used, following inflation with the Politzer method.

In a certain number, moderate in the catarrhal cases and small in those of the purulent type, the combined procedures just described under abortive treatment will be effective and cause resolution. But in a very considerable portion, the abortive treatment will be unsuccessful. If the symptoms continue for twelve hours, or if, as is often the case, when abortive treatment has been unsuccessful, there is some diminution in the symptoms during the day, but increased severity the following night, the indication for opening the drum membrane is imperative. It is then unnecessary to decide whether the otitis be catarrhal of purulent; it is unwise to wait any longer; the membrane should be *incised.* Paracentesis promptly done can never do any harm, even though there be a suspicion that the case will eventually be cured without it. On the other hand, in a great many cases, it is the means of saving the ear from chronic purulent inflammation of the middle ear with permanent injury, impairment of function, offensive discharge, necessity for tedious after-treatment, and even danger to life. The physical signs obtained upon inspection of the drum membrane should have much weight in deciding for or against paracentesis; *but when in doubt it is proper to incise.*

Regarding the method of doing paracentesis of the drum membrane, not very much need be said. The head of the patient must be held firmly; a forehead mirror should be worn; the illumination, whether daylight or artificial, must be good; the canal should be swabbed out gently with warm solution of bichloride, 1:5000. The knife or paracentesis needle must have the sharpest possible edge, so as to reduce the pain of the incision, which is always great, but which is excruciating with a dull or even moderately short instrument. Cocaine does not materially reduce the sensitiveness of the membrane; neither does solution of guaiacol. Repeated but gentle swabbing with solution of cocaine may be tried; it is possible that there is some effect; when the pain is so intense it is difficult to properly estimate slight reductions in sensitiveness.

It is customary to use the small, double-edged, broad needle, with obtuse-angled shank, known as the paracentesis needle. The writer prefers the small, narrow, thin-bladed knife ordinarily used for cataract operations—the Graefe knife; the absence of angle in the shank has never seemed a disadvantage, while in sharpness of edge this form of knife represents the extreme of possibility.

The incision should be made where there is the greatest bulging. It should be *bold* and comprise all the bulging portion. It is a mistake simply to make a puncture; hence it is better to speak of incision rather than paracentesis. Where there has been a spontaneous opening, this is frequently small and inadequate, and must be enlarged by a bold incision. Usually we will find most bulging in the posterior portion of the membrane; then the incision should commence just behind the short process of the malleus, and extend downward. If Schrapnell's membrane is the only portion which bulges, the incision should be made here.

Following the incision, with a variable amount of bleeding, there will be an escape of the accumulation in the tympanum-serum, mucus and pus in variable proportions. Often nothing but bloody serum escapes until some hours or longer afterward, when the discharge becomes muco-purulent or purulent. A little absorbent cotton is placed *loosely* in the meatus, and the child directed to lie upon the affected ear, so as to facilitate drainage.

No irrigation of the canal is indicated at this period, nor afterward, if the secretion from the middle ear escapes freely. But if tenacious mucus or thickened pus blocks up the canal, it is proper to remove such mechanical obstruction by irrigation with some warm antiseptic solution as often as necessary.

In many cases which are properly treated, the discharge will cease in a day or two, and the opening close; in some patients, however, the discharge will continue to remain purulent or change from sero-mucous to purulent, the opening remain, and a chronic purulent inflammation of the middle ear result. In a number of cases the incision gives but temporary relief; the opening closes, the exudation continues, there is an exacerbation of the symptoms, and the operation must be repeated.

Extensive inquiry and search have shown that aural complications of scarlet fever and measles are somewhat less frequent than formerly, and fewer children have chronic inflammation of the middle ear as a sequel. In the paper on "Scarlatinous Otitis," wrtten in 1889, numerous references are given to show that from 4½ to 5½ per cent. of all ear cases were due to scarlet fever. Later reports show a diminished number. Bezold, for instance (*Das Horvermogen der Taubstummen*, 1896), gives 640 as the number of ear cases following scarlatina, among 17,087 cases of ear disease seen by him in twelve years, from 1881 to 1892—less than 4 per cent.

This improvement in results is due to the following factors: 1. Cases of scarlet fever have been of a mild type in recent years. 2. It is customary to remove adenoids at a comparatively early period of life; the result of such interference is to diminish the risk of extension of the inflammation from the throat to the ears, if the child is attacked with scarlet fever. 3. More attention is paid to the condition of the nose and throat during the progress of the disease and before aural complications occur. 4. Paracentesis (incision) is resorted to more frequently and earlier than was the case formerly.

It seems likely that attention to the details given in connection with the description of the preventative and abortive treatment of the aural complications of scarlet fever and measles, would be followed by still better results. It is probable also that the number of aural sequelæ of these diseases could be diminished by the more frequent and earlier resort to paracentesis and by following the advice given above: *When in doubt, incise!—Archives of Pediatrics.*

PNEUMONIA THAT ONLY THREATENS.

By GEORGE DUNSMORE, M.D., St. Albans, Vt.

It is no uncommon thing to read in the newspapers of the day of some man of note who is threatened with pneumonia.

This is the kind of pneumonia of which I wish to speak. To me it is a new disease, having never heard of it until within a few years. Of its causes, symptoms, pathology, and treatment I know nothing, as I have never had the good or bad fortune to see a case of it. I assume that it must be of microbic origin, as every other disease now is. I must admit that I have very dire apprehensions that it may possibly be classed with the professor's bug. As the story goes, the professor told the boys that he wished them to bring him any rare specimens of bugs they might find, so that he might name them. The boys did as requested, and invariably found themselves bringing him bugs so common and so familiar to him that the business became monotonous. So they concluded to trap him. To this end they caught several bugs, and after disembowelling them, carefully and methodically made a new bug from them and presented it to him with the request that he would name it. After looking at it a moment he said, "Gentlemen, this is a *Hum-bug*."

I do not like to appear incredulous, because it might place me under the ban of old fogeyism, but I very much fear that the bug of this disease is a *hum-bug*. Let me emphasize a point right here; it is the difference between a threat and an execution. So long as my enemy only threatens to shoot me, I am safe, not even the smell of gunpowder on me.

So a disease that has only threatened has not yet struck a blow; when it strikes the threat ceases.

A threat is something outside of the party threatened. It is true that, if the party threatened sees the attacking party, he may manifest his apprehension of danger by such signs as the onlooker may readily interpret. In this case, however, it is only the doctor who sees the ghost. It reminds me of a spiritualistic meeting I once attended, where it was said ghosts of all ages and sizes abounded; where their names and the very color of their eyes were given. Yet in this shifting phenomenon of ghosts the medium, like our doctor, was the only one who saw them. Pneumonia, like a club, can leave no marks until it strikes, and cannot strike so long as it only *threatens* to strike.

Now, pneumonia to threaten must have some threatening signs, and they must be in it and not in the man. Will some one who has seen them tell? Do they come in the form of ghosts and shake their gory locks so deftly that only the physician can see them?

Croupous pneumonia is the form that usually attacks adults, and it does not hail its approach by throwing up sky rockets. It comes like a thief in the night. A man goes to bed well so far as he knows, is awakened in the night with a chill, followed by fever and perhaps pain in one or both pleura. He is not threatened now with pneumonia; he has it. It is pneumonia from start to finish.

Within a year a woman said to me: "You cannot imagine what a narrow escape I had from pneumonia. The doctor said he never saw anyone come so near having it and not have it." I said: "You must have thought of and consoled yourself with that old saying, 'A miss is as good as a mile.'" On another occasion, not long since, a woman of ordinary intelligence, but of a nervous temperament, said to me: "I was taken sick and sent for a doctor; he said I was threatened with pneumonia, and made me three visits that day." "I suppose you had it then," I said. "No, no. I was only threatened with it." Query—If a threat requires three visits a day, how many would the reality need? The power of seeing this apparition is not given to all doctors alike. It may be a question how our doctor of the three visits acquired this art. Not through hypnotic or spiritualistic influences, as the former would imply that he was controlled by his patient, and as for the latter, it deals only with the ghosts of departed mortals, and not with the apparitions of disease.

May it not be that our doctor is a soothsayer, and hence can predict the coming of events? When he predicts pneumonia, he differs from the ordinary fortune-teller, whose predictions usually brighten and lighten up the pathway of life with good cheer and happy days, and a long life, and a green old age disturbed by no fear of a threatened pneumonia. You may say that our doctor has good cheer for himself. Is it not good cheer to make three satisfactory visits, where one would have done? I said satisfactory visits, for any number would be satisfactory to the man who is led to believe that pneumonia is weaving around him its baneful web.

Have the medical trees become so productive of fruits that their branches have to be supported by such props as this?

It is true we are many and with every prospect of being many more. Twenty years ago there were in the village (now city) of St. Albans seven of us—to-day we number twenty-one, with an increase in the population of less than four hundred. Add to this that we have a body of men appointed by the Governor, through no political pull or favoritism, but purely on their merits as experts (to use their own language) in stamping out the diseases of the State at $5.00 per day and expenses. Then think of the number of their appointees (all on merit, of course), 245, making in round numbers an army of 500 feet, all stamping, stamping, together.

Gentlemen, think of an army of 500 feet stamping upon a few poor, defenseless microbes. What would, what could alone be the outcome? Nothing seems to escape the Argus eyes of these men. Even the poor little *measly* microbe, protecting, as it does, adult life from a disease incident to childhood, has fallen under their ban. Is it any wonder, with such State scavengers running before, behind and around us, that we should see visions?

He who has not the power of discerning the specter of a threatening pneumonia will not fail to see visions of empty pocket-books and howling creditors.

Add to these the patent medicines whose advertisements fill alike the secular and religious press of the country. Then consider the never-ending liberality of our Legislature in legalizing anything that wants to be legalized. And I must say that the more ludicrous the object seeking legislation, especially if it has any reference to the healing art, the more certain it is of success, and the better it takes with the people.

With all these, and many other, drawbacks, is it any wonder that our doctors should see things not visible to mortal ken?

IRRIGATION IN ACUTE PRIMARY GONORRHOEA.

By GEORGE M. COON, M.D., St. Paul.

My apology for taking up this much discussed subject is that those who are but beginning with the irrigation treatment may find some points to assist them, and at the same time to stimulate others who, as yet, are satisfied with older methods to utilize this newer one.

The Valentine irrigation is accepted generally as the latest and best apparatus, and reference to the inventor's article, in *International Journal of Surgery* for September, 1898, will furnish full explanation of the mechanism and many details of its use. I merely suggest that the irrigator, without the sliding attachment upon the standard is of little use.

This standard should be placed upon the wall, allowing maximum height of eight feet, when the pressure may be regulated by raising or lowering the percolator. I have not found it satisfactory to regulate the flow by the flange in the stop-cock. In selecting glass nozzles, the olive pointed are most desirable for anterior irrigation; the discharging orifice should be large, as the larger opening throws a less penetrating stream and gives a greater volume of fluid, and in consequence is less liable to irrigate the sphincter or enter the bladder, while by means of increased volume of fluid the operator may more quickly and fully distend and flush the urethra. The balbous nozzles are especially useful when the sphincter is rigid. Its caliber completely occludes the meatus, shutting off the return flow, and allowing the entire pressure against the sphincter.

It has been my custom in cases where the discharge is yet muco-purulent and the urethral mucous membrane but slightly inflamed, to use a 1-20000 solution of bichloride of mercury morning and evening for two days. Many cases will bear 1-15000, but it is much safer to commence with a weaker solution. If, however, the case has progressed to the stage of pus dischage—and we seldom see them until this time—irrigation is commenced morning and evening with a solution of 1-6000 of permanganate of potassium. This solution should be used as hot as can be well borne by patient and not less than one litre at each treatment. Before allowing the solution to enter the meatus, I direct the stream upon the glans and prepuce, until thoroughly cleansed. Pressure should be regulated to furnish volume sufficient to distend the urethra without causing pain to patient, but not sufficient to relax the sphincter and allow fluid to enter the bladder. Occasionally a patient involuntarily will allow the solution to pass directly into the bladder, however slight the pressure. It is well to caution all new patients not to relax the sphincter while the operator flushes the anterior urethra. If the nozzle be pushed into meatus until the shoulder occludes it, the urethra in its entire length will be filled sufficiently to stretch and flush every portion, when the instrument should be partly withdrawn, allowing rapid return flow to empty the urethra. To make this flushing effectual and not harmful it must be done quickly, otherwise the retained fluid will be forced on into the bladder, or as has happened, the too great continued pressure will cause congestion or inflammation at the sphincter and even epididymitis.

Commencing with the 1-6000 solution the strength is increased every day, until for anterior irrigation, 1-1000 causes neither pain not irritation. If a solution of permanganate be made of sufficient strength so that one drachm of such solution to a litre of water represents 1-10000, by the use of a graduate, we can easily increase the strength as desired. Dr. Valentine recommends in his treatment, that beginning with the fourth day, intra-vesical irrigation be employed each day, presumably that at that time infection of the posterior parts may or can take place. Heisler's statistics show infection posteriorly of 20 per cent. first week, 34 per cent. second, 14 per cent. the third and 20 per cent. the fourth, while Finger claims infection does not occur before third week. I believe these statistics, as others given further on, were furnished from hospital records and are not, therefore, applicable to private practice. Usually the sixth day has been as early as I have used intra-vesical irrigation, and is as early as infection will take place. A certain number, possibly 25 per cent., of cases will not develop posterior urethritis, and would recover if only anterior irrigation was employed. On the other hand the discharge may be prolonged from infection posteriorly without symptoms referable to those parts, and as no harm can come from proper intra-vesical flushing, we are justified in treating all cases as complicated by extension of urethritis to posterior urethra. In a majority of cases intra-vesical irrigation is easily accomplished. The patient can relax the sphincter at will, and enable the operator to flush the bladder with slight pressure, causing the patient no pain. Sufficient of the solution should be allowed to enter to fill the bladder, flushing every portion, and be stopped before sufficiently distended to cause pain. The patient should then be directed to assume an erect position to thoroughly empty the bladder. Owing to the irritability of the membranous urethra and shut-off-muscle, cases are met where the patient is unable to relax the sphincter, and it will tax the operator's ingenuity to flush the bladder without the use of the catheter. Care should be taken in such cases to avoid too extreme or long continued pressure, for while it may force the solution into the bladder, it will increase the congestion of the sphincter, and cause each subsequent attempt to be more difficult and painful. Deep inspirations will often relax the muscles, if that is ineffective, divert the patient's mind. The act of laughing is equally effective. In some cases if the solution is used extremely hot the sphincter will yield, although lukewarm water is generally less irritating to the deep urethra and much less so to the bladder. If these methods fail a soft catheter should be passed and the bladder flushed by that means. Whether using the nozzle or filling the bladder by the use of a catheter, the anterior urethra should always be first thoroughly flushed.

The object of this intra-vesical treatment is apparent, in view of the complications possible and probable, as sequelæ of a posterior urethritis, viz.: prostatitis, epididymitis, vesiculitis and for preventing the possible extension of infection to the ureters and even to the kidneys. Beginning on the sixth day a solution of 1-6000 is used in the bladder, increasing daily until 1-2000 can be used without causing pain. The intra-vesical irrigation should be made late in the day, as there is commonly some irritation and a frequent desire to micturate, lasting about two hours after treatment, hence the convenience to patient of having the injections after business hours. The subject should be placed in a recumbent position, placing him for convenience, upon his side facing the operator. A basin can then be easily placed beneath the parts, which with the aid of the shield will catch the returning fluid. The standing and sitting position often cause patients to faint and relaxation does not come so easily in an upright posture. When irrigation is complicated by a small meatus, it should be enlarged. The average urethra will take an 18 American sound, and when it is of less dimensions an incision should be made with a blunt pointed bistoury, thus enlarging the canal to about that calibre, always using care to follow the median line, and not mutilating the parts by carrying the incision through to the frænum, as is sometimes thoughtlessly done.

When the gonococcus disappears the gonorrhœa may be said to be cured, but there are practitioners who have no facilities for examining macroscopically. These must depend on the macroscopic signs of cure of which the following are the most reliable: "The meatus is a good index. When the "Morning Tear" cannot be found, nor during active hours either moisture at the meatus or gluing together of the lips of the meatus is apparent, together with the fact that the internal or mucous surface of the meatus has regained its normal appearance, and on a careful examination of the urine no shreds are found then the patient may, I think, be pronounced cured. However, if reasonably possible a microscopical examination should be made or obtained, as this is by far the surest indication of complete restoration. Irrigations, both anterior and posterior, should be continued until all discharge, whether mucoid or otherwise, has disappeared and the urethra resumed its normal condition.

The statistics, as given by Goldberg, that by irrigation 60 per cent. are cured in 10 days, 30 per cent. in 14 days, 5 per cent. in over 14 days and 5 per cent. as failures, I must conclude, as in statistics given earlier, are taken from hospital records. The treatment of gonorrhœa to-day must be so conducted as to allow patients to continue with their usual routine of business and habits of living, and under such conditions the statistics of Goldberg would be impossible. If, under the present system, 60 per cent. are cured in 14 to 18 days, we may be satisfied, and if greater length of time be required, the freedom from annoying complications, assured by this treatment, and the certainty, eventually, of a complete restoration of the parts to their normal condition will more than compensate for the tardiness of the cure.

DIAGNOSIS OF RECTAL DISEASES.

By GEO. J. MONROE, M.D., Louisville, Ky.

The symptoms which usually present themselves which call a patient's attention to diseases of the rectum are many. The leading and most prominent is pain. This may be directly in the anus or rectum, or it may be in the pelvis, in the back or legs. We have hardly any rectal disease without having as an accompaniment pain in the anus or rectum. The pain may be slight and hardly noticeable, or it may be very severe. Severe pain does not always indicate serious disease, for the pain may be very little, yet the disease be of a serious character.

We may have, and generally do have, with many rectal diseases discharges of blood, pus and mucus. These discharges are considered much more serious by the patient than is simply pain. Then, again, we may have protrusions of the rectum, hemorrhoids, polypi, malignant growths, etc. We often have a disagreeable and aggravating pruritus or itching.

Some authors include diarrhea, dysentery and constipation as rectal diseases. I do not think they can be properly called rectal diseases.

The pain may be located near the verge of the anus, or higher up in the rectum; it may be constant or only observed after defecation.

Generally we have pain accompanying hemorrhoids, either internal or external. Ulceration and malignant growths, and especially irritable ulcer or fissure, are painful. The pain resulting from fissure is severe and peculiar, differing from all other pain about the rectum. It produces heat, smarting, gnawing, burning, and sometimes it is spasmodic and lancinating. The pain peculiar to fissure is almost absolutely diagnostic of the disease. The pain of hemorrhoids is governed almost entirely by the amount of inflammation present. External piles, if inflamed, are extremely painful; if they are not inflamed they cause very little suffering. If internal piles are not inflamed and are not down they are not painful.

If ulceration be located above the external sphincter muscle there is very little pain, but if it extends downward so the sphincter presses upon, it is generally painful. In cancer of the rectum there may be little pain, hardly more than an annoyance. Then, again, especially if the growth is grasped by the external sphincter muscle, the pain may be severe and almost unbearable.

The protrusions may be the rectum itself, internal hemorrhoids, polypi or malignant growths. These can easily be determined by a visual examination.

In simple prolapse of the rectum we may have bleeding, but, as a rule, not very much. Internal hemorrhoids may bleed very freely. Fissure bleeds very little. Ulceration not much, and cancer, in its first stages, hardly at all. The amount of bleeding is almost diagnostic of the disease present. Internal hemorrhoids may bleed extensively if they are down, but bleeding usually ceases when they are replaced. The bleeding from fissure is only a few drops, and this usually during defecation. Prolapse, unless a rupture of the rectum takes place, does not bleed much. In ulceration we seldom ever have pure blood, but the blood is mixed with pus and mucus.

If we have stricture and ulceration the blood resembles coffee-grounds. When cancer ulcerates and breaks down we may have an exhausting hemorrhage. I do not know that polypi bleed; I have never known one to. From their nature, I presume they may.

The rule is, that we have constipation with the majority of rectal diseases. I think it is generally the cause of the disease. Of course, there are exceptions to this rule, for in ulceration of the rectum we more often have a diarrhea or frequent actions of the bowels; in fact, these tenesmus actions are frequently diagnostic of ulceration.

We should examine the feces in rectal diseases. Their nature, form or shape, consistency, if mixed with pus or mucus, etc., etc., help in making a diagnosis. If soft and mixed with pus we look for ulceration; if hard, round and small like a lead pencil, or flat or ribbon like, we expect stricture of the calibre of the rectum. If hard and lumpy we expect some obstruction somewhere. This may either be a stricture or contracted condition of the calibre of the gut. What I believe may produce this condition is enlarged prostate gland. Should there be pus discharged in large quantity at any time, the indication is that an abscess has ruptured internally. We may have an increased mucous discharge from most any unusual irritation of the rectum.

All the above symptoms aid us in making a correct diagnosis of the rectal disease present.

The methods I make use of in examining the anus and rectum are as follows: I have the patient lay upon the left side upon my operating table, the left arm thrown back of the body, the knees drawn upwards toward the abdomen. I believe a simple table is better than any chair that ever has been invented. My table is six feet long, two feet and a half wide, and three feet high. This table is made very heavy. In the end I have two drawers for instruments, cotton, vaseline, medicines, etc., etc. The top of my table is oak. I think very little is gained in having a glass top. Glass can perhaps be a little easier cleaned than wood. Patients complain a great deal about glass-top tables being cold; this is especially so in the winter season. It matters not how warm our room may be, the glass is cold. There is not this objection to wood, and I do not believe there is any reason in the world why we cannot clean a wooden-topped table. I believe that soap and water, well used with a scrub-brush, will kill all the little bugs.

Women, as a rule, object to an examination, but I believe we make a great mistake if we attempt to treat any rectal disease without first making both a visual and digital examination.

In making an examination of the anus and rectum we should endeavor to be as gentle as possible, for they are very sensitive. First, we should take a general survey of the external parts. We should notice if there be any swelling or redness, any irritation or inflammation, any eruption, any deformity, anything abnormal. We then, by gentle pressure upon the buttocks or around the anus, should ascertain if there be any tender or painful points. We should try and determine whether there is any increased heat. We can then separate or pull the hips apart; this will give us a partial view of the anus, sufficient to determine if there be any cracks, external hemorrhoids, excoriations, discharges, irritable ulcer, eczema, etc., etc. After having inspected the parts in this way we should oil the forefinger of the right hand. I find vaseline or borated lard good for this purpose. Oil does not answer the purpose very well. We now open the anus with the thumb and forefinger of the left hand, and gently and slowly insert the prepared finger of the right hand into the rectum through the anus. I use a boring process—that is, turn the finger half round and back again. The finger can be entered in this way without producing much pain. The first thing we determine is the grip of the external sphincter. If it grasps the finger tightly it indicates a fissure or irritable ulcer. If the sphincter be relaxed it indicates weakness or lack of contractile power. This relaxation may be produced by cancer, prolapus of the rectum, or large protruding piles. If our finger be sufficiently educated we can diagnose internal hemorrhoids. This, I know, is doubted, but I am satisfied that we can do it almost positively. We can feel ulceration, stricture, internal growths of all kinds. We can also locate the internal opening of a fistula, we can diagnose impacted feces; we can also ascertain the condition of the prostate gland. In women we can, by a digital examination of the rectum, decide the condition and position of the uterus, especially if retroverted, enlarged or prolapsed.

In regard to the use of the rectal speculum, I must say it is almost unnecessary for the purpose of diagnosis. The introduction of any rectal speculum that ever has been made is painful, much more so than the well-oiled finger, and, as a rule, they show very little of the rectum. If we use a speculum at all I believe the very best are two blades of Sim's speculum hinged on the side, with a handle attached at a right angle to the blades. In this handle is a screw to open the blades. The blades should be conical. With this speculum we can see one side of the rectum, and we can easily turn it in the rectum without removing it, and thus examine the entire rectum. There are a great many rectal speculums in the market, but none better than this simple one for the purpose of diagnosis. Among the great number of rectal speculums we may enumerate Mathews', Cook's, Gant's, and Pratt's.. If we wish to use any of these we had better give our patient chloroform.

When we use an anesthetic for any purpose, either for diagnosis or treatment, I prefer chloroform. I never use anything else. A north light, if we can obtain it, is the best for any purpose. We can use electricity, but it is not as good as the light of the sun. A small hand may be passed into the rectum for the purpose of diagnosis. This I think is seldom ever necessary. I have never done it, and my hand is not large. I would hesitate sometime before attempting to do it. I would at any rate exhaust all other means first. I do not think it is a safe thing to do, and would not advise that it should be done. The anus might be torn, the sphincter muscle broken asunder, the rectum ruptured, and other damage done.

I have seen one case in my practice of imperforate anus in a child. I operated, and I think the baby died somewhat sooner than it would have done had I not done so.

I saw a young lady who had no external anus. The rectum opened into the vagina. She also had three uteri. Dr. Byford operated in her case, removing the wombs and making an external anus. He closed the recto-vaginal fistula. She died the third day.

I have seen one case in a lady where the anus became closed from instrumental delivery of child. The operation in her case was successful.

I have seen two cases postmortem in children where the anus was closed, and at least two inches of the lower end of the rectum.

There are many other abnormal conditions of the anus and rectum. Operations for the relief of these conditions are not very flattering.

Dr. Ball, of Dublin, Ireland, reports the following:

Colon opened nineteen times for imperforate anus, fourteen deaths; anus punctured seventeen times, with fourteen deaths; coccyx resected eight times, with five deaths; perineal incision thirty-nine, with fourteen deaths; communication between rectum and vagina fourteen, one death. This report shows a death-rate of 50 per cent.

Dr. Cripp's reports are about the same as Dr. Ball's. I am inclined to think the results are a little better to-day.

In my next paper I shall take up prolapsus of the rectum.—*Cin. Lancet Clinic.*

THE RESPONSIBILITY OF THE SURGEON.

An action of damages against a Western surgeon of standing and repute for the death of a patient, alleged to have been caused by sepsis due to a gauze sponge left in the abdominal cavity by oversight of a nurse, opens up a medical legal question of great moment and far-reaching interest.

From statements appearing in the daily press, it is alleged that the nurse, who was charged with the counting and care of the sponges, when asked at the close of the operation whether all the sponges were accounted for, replied with positiveness in the affirmative, and the surgeon, without suspicion of misgiving, closed the abdomen. Without seeming to prejudge the case or to speak ex cathedra as to the exact judicial status of the case, it must be apparent that if the responsibility for the accident can be fixed, a jury would be likely to award heavy damages. While it must be admitted that the nurse was derelict in her duty and that her want of care was the chief factor in causing so deplorable an event, it is doubtful whether the principal can escape the responsibility.

From the ordinary interpretation of common law, as related to damages, it seems to be well established that the contracting party, in this case the surgeon, must assume the entire liability, unless it be alleged that in this case the nurse was maliciously guilty of leaving the sponge behind.

It must be conceded that a surgeon who assumes so serious an operation, on which the safety of life depends, must possess more than the ordinary skill which would qualify him for a minor operation, and that the exhibition of ordinary skill would make sure the avoidance of so great and fatal a mistake.

Perhaps mitigating circumstances may have entered into the case which at the trial will exert qualifying and extenuating influences, and thus relieve the operator to a greater or less extent from his technical responsibility. The result and not the motive will sway the decision of the court and contribute to, if not control, the measure of damages. Whether the verdict in this case will turn on the strict interpretation of law and testimony, or on sentimental considerations, remains to be seen.

Doubtless many of the readers have known something of the anxiety concerning post-operative results in which the fear of similar neglect has given them unnumbered pangs of uncertainty and unrest.

As regards this particular accident it seems that attention to one of two points in technique would prove effective: Either all sponges should be fastened in holders, or kept in the fingers of the operator and removed when used, or they should be of such length, say a yard, as to allow one end of each to project outside the wound.

However this case may terminate, it will have served a valuable purpose of calling the attention of the surgeon to those accidents which are liable to occur as a result of inefficiency or neglect on the part of nurses and assistants, and impress on him the necessity of great circumspection in the technique of operative surgery.—*N. Y. Lancet.*

THE WAY TO EMPLOY COLD IN TYPHOID FEVER.

By G. R. JOHNSON, M.D., Philadelphia, Pa.

Typhoid fever has been practically endemic throughout the civilized world for many years. Different methods of treatment have been in vogue at different times, among these being purging, bleeding, and other equally radical measures. Then so-called therapeutic nihilists treated the disease without drugs and with great reputed success, probably because no treatment at all would show a larger per cent. of recoveries than would the barbarous treatment then used. But of late the mortality has been reduced from 35 to 40 per cent. to 7 or 8 per cent. The great reduction is due to several reasons: First, people are gradually acquiring somewhat of an immunity to the disease; second, owing to our knowledge of its transmission, prophylaxis prevents the individual from getting such virulent dosage of the infection as formerly; third, we know much better how to treat the disease.

The Brand method of treatment has undoubtedly been of the greatest value of any thus far advanced, and to it the great decrease in mortality is largely due. Not only in itself, but indirectly, this principle of hydrotherapy has been of the greatest possible value. It has shown the physician how much can be done without drugs and how little they are really needed in the majority of cases.

The treatment of typhoid fever by the use of cold depends on the reaction produced, and this must be obtained in every case or the treatment stopped. Mainly for this reason the bath treatment should not be begun after the third week, and does the most good when instituted before the fifth day. The treatment is practically that when the patient's temperature reaches 102½°, he is to be immersed in a tub of water at a temperature of 75°, rubbed for fifteen or twenty minutes, dried, put in bed, and if needed, a hot water bottle put at the feet and a stimulant of whisky given.

Now the Brand method has undoubtedly saved hundreds, probably thousands, of lives, yet this is no reason for employing it in every case. There should be no routine treatment in every case of any disease. The thing to do when called to a case of typhoid fever is to decide if it is possible to treat the case by hydrotherapy without resorting to the plunge bath. In private practice the questions of a suitable tub, assistants to put the patient into the tub, attend to the bath properly, etc., are serious ones and must be taken into consideration. Again, many more people will allow cold in the form of sponging to be used than can be persuaded to submit to the plunge. However, the Brand bath is exceptionally valuable in some cases where they are seen early in the attack, where the fever is high and it is almost impossible to reduce it by any other means. In these the plunge should be used if at all attainable. At the same time there are other cases where sponging gives just as good results.

If the plunge is used an ice cap should be applied to the head of the patient while he is in the bath or iced water poured over the head at intervals, this being also just as necessary when the sponge is being employed. In regard to obviating the difficulty of lack of attendants by having the patient walk to and from the tub or help himself into it, I do not think this is justifiable. It is generally held by physicians that it is best to conserve the strength of the patient as much as possible during an attack of fever, and this is best done by rest in bed. Again, it is a dangerous thing for a man in the third week of typhoid fever, with a degenerated, dilated, and poisoned heart, to get into the erect or semi-erect position or help himself in and out of the tub. If there is great ulceration of Peyer's patches, this change of position may so disturb the intestine as to cause hemorrhage. This principle is recognized when friction is used by the fact that the belly is not kneaded, thus avoiding any traumatic disturbance of the gut. Assistants should always lift the patient into and out of the tub, some excellent devices having been suggested for thus carrying the patient. After having the bath the patient should not be covered too warmly. This should not be necessary if proper reaction has taken place, and at any time helps raise the temperature and counteracts the effects of the bath.

If the sponge is decided upon when the temperature is high and obstinate, the patient should be stripped and the bed protected by a rubber blanket, over which is placed a sheet. Then the nurse takes a piece of ice and sweeps it over the body vigorously, at the same time applying friction with the other hand, or having this done by another nurse. This friction is a most important part of the procedure, it increasing the loss of heat by at least 50 per cent. over the application of cold alone. Pressure should not be great, but active friction with the ball of the thumb and palm of the hand until the skin is red from the reaction. If friction cannot be used, then do not apply cold, as the two must go together.

When the sponging is being done particular attention should be given to the great muscles of the back, buttocks, and thighs. These are great producers and conservers of heat, and thorough sponging of them has a decided effect upon the temperature. In this respect sponging is a great advantage over the plunge, as these muscles cannot be reached nearly so effectively when the patient is in the tub. There is also another advantage besides the mere reduction of temperature. This thorough friction stimulates the muscles upon which the patient lies nearly all the time, and thus keeps them and the more exposed portions of the skin over the bony prominences in a healthy state, aiding in excretion and greatly diminishing the liability to bedsores.

As before stated, it is difficult to give the plunge bath in private houses, and many people will allow the sponge who will not the bath.

Patients who object to hydrotherapy can often be induced to yield to its employment by beginning gradually. First a tepid sponging may be given, and gradually less tepid water may be used until cold water is employed. Then state to the patient or friends that the point in the disease has been reached when water with pieces of ice in is needed, and finally ice water or pieces of ice as described may be used when it is found that the patient does not catch cold, as it is always feared will be the case. Frequently people will think it all right if alcohol is added to the water. This may be done, as it also adds to the cooling properties of the sponging.

TYPHOID FEVER AT ONE HOSPITAL DURING SEVENTY-EIGHT YEARS.

By **CHARLES E. PAGE, M.D.**, Boston, Mass.

The conclusions reached from the study of the records of the Massachusetts General Hospital for the past seventy-eight years,* according to the report of Dr. R. H. Fitz, of Boston, are as follows:

1. The treatment of typhoid fever does not differ in essentials from the principles laid down in 1839.

2. The average mortality from this disease has not materially changed from the days of active treatment with emetics, purgatives, venesection, antimony and calomel down to the present time.

3. Intestinal hemorrhage, perforation and relapse, upon the whole, are quite as frequent now as at any period in the history of the disease.

Surely this presentation of the status concerning the treatment of typhoid fever is in itself sufficiently disheartening, and all the more so in view of the fact that Dr. Fitz seems to have no remedy to offer for the evil, and is able to suggest no marked improvement in the treatment for a disease that in this country alone destroys upwards of 50,000 lives annually, a money loss from sickness and deaths amounting to about sixty-four millions of dollars.†

But a careful study of the tables furnished by Dr. Fitz seems to the present writer to show even a worse state of affairs than his summing up would indicate: The average mortality from typhoid fever at the hospital named for the first thirty-eight years was 12.75 per cent., but for the succeeding forty years (1859 to 1899) it was 15.5 per cent. If we accept the foregoing as fairly illustrative of the general treatment, or rather, we should say, of the practical uniformity of the treatment ("not differing in essentials" during the past sixty years), and of the death-rate, at most other regular hospitals throughout this country (and we have no reason for concluding that the Massachusetts General is lagging in the rear of progress, so far as relates to practices in vogue at the great majority of

---

*A paper read before the New York State Medical Association, Oct. 25, 1899, and printed in the *Boston Medical and Surgical Journal*, of Nov. 23, 1899.

†Estimate of Prof. Victor D. Vaughan, of the Michigan University.

hospitals), the significance of a markedly different treatment, with its greatly lessened mortality, as tested in a few hospitals and in the private practice of here and there a physician throughout Europe and this country, becomes all the more emphatic.

The statistics furnished by Drs. Brand, Vogl, Juergensen, and others in Germany, and Baruch, J. C. Wilson (Professor of Therapeutics in Jefferson Medical College, Philadelphia), and others in this country, concerning the results from skillful hydrotherapeutic treatment in typhoid fever, together with a radical modification of the diet in these cases, and the withholding of drugs that tend to destroy whatever small capacity remains to the stomach and intestines for utilizing food substances, slight as is this capacity in all cases, and totally absent in many, gives us a bright outlook for the future history of this disease. In one series of cases treated by the three German physicians above named, there were only twelve deaths in 1,223 cases of typhoid fever, and, most remarkable of all, says Dr. Baruch, "not one of these twelve deaths occurred in any case coming at once and early under the bath treatment." The accuracy of these figures is beyond dispute, as is the fact of Dr. Wilson's success with this treatment at the German Hospital, one series of cases, numbering sixty-four, having been treated without a death.

But it is not the whole of the question to so treat patients as to bring them off their sick-beds and onto their feet once more, regardless of any part of a treatment which lowers the vital forces and tends to prolong the illness. What is also needed is to abort the sickness if possible, or to shorten it as much as possible, as all would readily admit, and to restore the patient in clean, sound condition, quite different from the condition of typhoid fever patients who are said to have "recovered" from this disease, a state indicated by the life insurance statistics concerning the after effects of the disease and the routine drug treatment, according to which one-fourth of all "cured" typhoid fever patients finally die of consumption. But so long as the great proportion of physicians continue the practice of forced feeding in this disease, in face of lack of appetite, nausea, not to say in spite of even loathing of food, thus making a cess-pool of the intestinal canal, as is true in practice, and as from the appearance of the tongue and evident condition of the stomach one would decide theoretically would be the case, a state inclining the physician to employ drastic drugs more or less constantly in order to prevent speedy death from ptomaine poisoning—as one brutal act so often leads to another—so long as this sort of feeding to promote high temperature is practiced, making a demand for antipyretic drugs to down this artificially prepared pyrexia, downing the patient's vital forces necessarily at the same time—while this sort of practice is the prevailing one there can be no hope of a lessened mortality. Indeed, it is a tribute to the toughness of the human organism that any patient thus treated ever leaves the sick-room alive.

What, in my estimation, should be universally recognized as a truism, that in default of digestion and assimilation food becomes a drug and a true poison shortly after entering the stomach, seems a fact impossible to argue or to pound into the skull of the average medical man. Even when the stomach of a patient is so rebellious as to make feeding impossible, the physician usually prescribes champagne or some other alcoholic stimulant, instead of giving the overtaxed organ absolute rest, and then imagines that his patient has been kept alive by means of this drug, seemingly oblivious to the fact that while any such patient is supplied with fresh water and fresh air he cannot die of starvation while any flesh remains over his bones, and to another most significant fact, that of any two men, sick or well, one being profusely supplied with water only, and the other with any amount of dilution of alcohol, the former would (other things equal) outlive the latter.

In the *Medical News* for December 2, 1899, occurs an editorial on "The Present Status of Hydrotherapy," which should be read and pondered over by every practicing physician. It is a plea, backed up by liberal quotations from eminent physicians, for the introduction into all medical schools, of hydrotherapy as one of the most important branches of therapeutics. Kussmaul is quoted as declaring that "of hydrotherapy the young physician knows almost nothing. [But the old ones seem to know no more.*] Here is a great gap in the education of our physicians, and the real cause of his inability to cope with the empirics for the public favor!" It argues well for the general intelligence of the laity when a physician of Dr. Kussmaul's discernment intimates that they are enabled to distinguish between the successful irregular and the inefficient regular; but it is a sad criticism of the profession at large.

Thus far I have made no reference to drugs in the treatment of typhoid fever, except to condemn the routine employment of medicinal antipyretics, whose chief virtue seems to be, as Dr. Baruch has so aptly said, "that they enable the typhoid fever patient *to die with a fairly normal temperature*," and to indicate that such drugs as calomel, for example, or other violent purgative, will never be required if a strictly water diet be held to until we have reason for concluding, from the appearance of the tongue, condition of the stomach and bowels, together with a genuine hungry appetite,† that digestion and assimilation will follow the ingestion of solid food.

But it usually happens that long before the physician is called to a case of typhoid fever, and the same is true in rheumatic fever, scarlet, in short, in all severe illnesses, the patient has been fed *ad nauseum* and has his stomach and bowels crowded with putrefying food substances requiring to be gently moved along and out. When such a case presents itself to me, it has of late been my practice to employ a new drug which I have used frequently with satisfactory results in other forms of diseases, notably gout and rheumatism, but which I have never seen recommended as having any place in the treatment of typhoid fever, viz., thialion. A teaspoonful (for an adult) in a half-cupful of moderately hot water often suffices. With its known effects as a gentle laxative, I do not see why this preparation, so highly extolled in the treatment of diseases believed to result from excess of uric acid in the blood, should be wholly confined to the treatment of these disorders. While I would sooner be deprived from using any medicament in our materia medica than to be withheld the entire control of the alimentation of the patient, still in cases such as I have cited above, and as a preliminary to therapeutic fasting, a dose or two of thialion is in order.

---

*Brackets, present writer.

†After a few days' fast, or at any rate when the proper time for feeding shall have arrived, a piece of stale graham bread will taste delicious to the patient, and a moderate sized piece may be allowed, say twice a day, each mouthful to be chewed in the most thorough manner. Even here, the patient should sacredly regard the rule to "always rise from the table hungry!"

For years past I have sacredly avoided the use of calomel and other drugs noted for "stirring up the liver" in what might be termed a bull-dozing fashion; but thialion seems to act favorably both on the liver and kidneys aiding in the work of elimination.

Once the alimentary tract is cleared of its fermenting matters, it should be let severely alone, except so far as concerns the profuse supply of fresh, soft water, which should often be urged (though never to his inconvenience) upon every fever patient. It will generally be craved; but in some cases, or at some stages, moderately hot water, perhaps with a few drops of lemon-juice (occasionally), will be more acceptable. It is essential to maintain the normal fluidity of the blood as nearly as possible, and water is the only liquid indicated for this purpose. To a body perishing from drought, water is the most nutritious of all foods. In fasting patients the bowels are normally closed and should so remain until feeding is resumed, when they will move naturally in good time, without artificial help, other than an enema of a cupful or two of cold water in case of a collection of fecal matters difficult to expel.

With therapeutic fasting in typhoid fever, I rarely have occasion to employ the full bath treatment to any great extent, often not at all, the damp bandage from arm-pits to hips (two folds of coarse linen wrung tightly from ice-water, with two folds, dry, outside), freshened as often as it gets heated up, fully meeting the needs in most cases, so far as the treatment of the trunk is concerned. For headache the cold compress properly applied is delightful and curative. This should not be the usual little, wet rag, but a thickly folded towel pressed kindly but firmly all about the head, the hair being first well wetted.

Neither the damp bandage not the Brand bath is properly employed for the purpose of directly reducing the temperature of a fever patient; it is far from desirable to abruptly interfere with Nature's curative process by downing the temperature with either water or drugs. The proper object of expert hydriatic treatment in these cases is to brace the heart and nervous system, and this is accomplished by the brief shock of cold, followed by the speedy warming up of the bandage, to be repeated once every two or three hours, or oftener when needed. Under this method of treatment we know nothing about intestinal hemorrhage, perforation, relapses, nor even of uncomfortable tympanites. The patient is kept in an easy, comfortable state, requiring very little attention beyond what any ordinary housewife or nurse can comfortably supply.

154 Tremont Street.

[This article was to have appeared in the February number, but owing to the assignment of other matter to its space it was necessary to omit it.—Ed.]

OPERATIVE SHOCK AND STIMULANTS.

We all have excellent ideas in regard to the employment of the various stimulating agents in the presence of shock following operative or accidental injuries, and we are all pretty well agreed as to which of them constitute the most effective ones. Theoretically we know all about it; we are aware of the value of heat to the limbs and the precordial region, we fully realize the excellent influence of saline infusion and transfusion, and we are thoroughly acquainted with the best drugs that may be used for stimulating purposes. Notwithstanding all this knowledge, it may be admitted that in practice we are rather apt to err. The deplorable fact that in hospitals the most recent accession to the house-staff is commonly the anesthetist, and that in private practice we often have to rely upon the nearest friend or acquaintance, often produces a state of things during which the anesthetizer is apt to use his hypodermic syringe with more vigor than judgment. Now, too much stimulation is distinctly harmful, if only in predisposing the patient to further and more abundant hemorrhage. Then we are also compelled to regret the fact that, while we know what to do, we often find ourselves lacking in the necessary appliances. It is very idle work to be rushing about for things that should have been made ready beforehand. Every serious operation should be properly prepared for, and the preparations are incomplete if we have not at hand plenty of hot saline solution and the apparatus needed for its administration, means of applying heat to the body, medicinal stimulants, and so forth.—*International Journal of Surgery.*

ANEMIA.

By GEORGE GIBSON, M.D., Southport, England.

Anemia is a term with which the general public has become acquainted in the advertising columns of the newspapers.

The term is used very vaguely in connection with the advertisements of certain patent pills which have attained a large measure of popularity. The word represents to the average newspaper reader something of a mysterious nature; at any rate its meaning is enveloped in mystery, which receives a meager and unsatisfactory explanation in the columns of the daily press. The "bated breath" with which many persons pronounce the word is a positive proof that there is a deal of misconception prevalent in the public mind concerning the meaning and proper application of the term. It is a fact that, as the conditions of life become more onerous and exacting, the health of the race and individual must necessarily deteriorate. Any student of geometry understands the meaning of the word corollary, and that is a term that may be correctly applied to the deductions that may be drawn as to the results produced by certain forces acting on the individual and on the race.

What form does the decadence or decline take? Is it mental, physical, or both? With regard to the mental condition of the inhabitants of the British Isles, and all territories under English rule, I am an optimist. Overcrowding, or what is frequently called congestion in large towns and cities, is productive of serious injury to bodily health. Impure air, deficiency of sunlight and insanitary dwellings produce anemia, and frequently induce a tendency to very serious diseases. The prevalence of pulmonary consumption or phthisis in large towns and cities is capable of explanation, and unfortunately the unhealthy conditions previously referred to have a share in its production. When the old-fashioned notion prevailed which taught that certain persons were consumptive from birth, and that a mere "chill" or common cold produced the actual disease termed "consumption," it was the universal opinion that certain persons must inevitably succumb to its attacks.

Now, fortunately, the "common cold" has lost its terrors in this association, and former notions that bore the name of heredity have been banished with other unpleasant memories. Probably the ignorance that prevailed until recently has acted like a fog and obscured the mental processes of people otherwise intelligent.

A foot-baller or agricultural laborer thinks very lightly of a common cold, whereas a clerk in a counting-house or a seamstress in a clothing factory being already somewhat enfeebled in constitution are liable to the attacks of the specific micro-organism to which scientists have applied the name of the "tubercle bacillus."

I have wandered from my original subject, although the ideas I have tried to refute are not disconnected with the disease or symptoms termed anemia. The old saying, "Prevention is better than cure" is sound philosophy. We have doctors in abundance, but the health of the public is not perfect. Medical skill may cure diseases, but the habits may not be rectified, or they may be positively vicious.

A religious life is the only true existence from a physiological point of view, and Christianity teaches cleanliness and proper consideration for bodily health.

PARTURITION AMONG THE ESKIMOS.

By C. C. GLEAVES, M.D., San Francisco.

Ex-Surgeon U. S. Steamer "Bear;" Late Surgeon Kotzebue Commercial and Mining Company.

While spending the winter in northwestern Alaska, I was very much interested in witnessing an Eskimo woman giving birth to a child. It is seldom that a "cablona" (white man) doctor is permitted to witness this trying ordeal. However, as I had treated different members of the family, and had gained their confidence, I was permitted on this occasion to be present.

It is the custom among the Eskimos not to be confined in an "igloo," or house. The woman must go into the woods or brush alone—no one, not even the husband, being allowed to be present—and remain there with no food except a piece of dried fish for "five sleeps," when she is permitted to return to the "igloo;" no doubt, that being the time required for the lochial discharge to cease. Whereupon, she and her husband take a bath and change their undergarments, when they are fortunate enough to have a change. They are then supposed to be clean until the next confinement.

At the time of the monthly periods of menstruation, a woman is not allowed to enter a boat or ride upon a sled of her husband.

In January, 1899, during the long winter nights, after "old sol" had bid adieu to the people of northern Alaska to seek a more genial clime in the sunny South, and in the midst of an Arctic blizzard, a messenger, a little Eskimo boy, came to my "igloo," and announced that "Mama speak catchem mickaninny by and by," "speak" being a term in universal use. I arose from my bed, dressed myself in fur clothing, and started for the scene, a short distance away, the thermometer ranging from thirty to forty degrees F. below zero, where I found the woman out in the brush in a snow pit, oval in shape, about two feet deep and six feet across, with a few spruce boughs thrown around the margin as a windbrake, together with a smoky fire of twigs. The parturient chamber had been prepared by the woman herself, by scattering a thin layer of dried grass prepared by her for this occasion, upon which was spread a reindeer skin, with no covering of any kind.

On my arrival at the parturient field I found the woman in labor, on her knees, with buttocks resting on her heels, and having severe bearing-down pains, which came faster and faster and more severe until almost continuous, when the bag of waters ruptured. The mother of the woman and my interpreter, the little boy, who were near by, began to exclaim, "Mama muckey, mama muckey," "mucky" meaning to die. I asked the boy what was the matter with mama. He said in reply: "Mama look see pechuck," "pechuck" meaning no, or negative, or in other words, she could not see; her blindness, no doubt, being due to syncope. I assured them that mama would soon be all right, and not to be frightened. She soon rallied, and labor progressed naturally through the second stage; and after an interval of one-half to three-fourths of an hour the pains returned. She again had syncope, no doubt due to hemorrhage. She soon rallied again, and expelled the placenta, whereupon she took a piece of sinew, which had been previously prepared from the hock of a caribou, and ligated the cord as close to the umbilicus as possible, then severed the cord close to the ligature with a piece of serrated flint. She washed the babe in snow, although it rebelled by kicking and squalling lustily at such a cold reception. Notwithstanding the rigorous conditions surrounding the Eskimo mother in childbirth, the rate of mortality of the babes born will agree favorably with our own death-rate, and the same may also be said of the mother. Nature moves in a mysterious manner to perform her miracles and reproduce herself.

The woman wore a belt or a piece of thong to confine her "parka" around the waist, and to it was fastened by short deer-skin thongs bits of ivory, buttons, leather bags in which she kept tobacco, matches and other small articles of value. After the snow bath she placed her babe underneath the folds of her "parka," which is the usual resting place of the young Eskimos (although sometimes astride the mother's neck), and proceeded in a bent-over position, with staff in hand for support, stepping slowly and laboriously, leaving a trail of blood, to another snow pit about fifty feet away, which had been prepared. She would not remain any length of time at the place where the babe was born, for it is considered unclean.

Our own women think they have an awful time during confinement, and some of them do; but what a contrast between them and their Eskimo sisters. Just imagine for a moment one of our women confining herself alone and under such conditions!

Generally speaking, from a moral standpoint, the Eskimos are not as immoral as one would naturally suppose. They seem to have a law which is inherent in the hearts of all rational beings, to "do unto others as ye would that others should do unto you," and I believe that these people live up to that law more nearly perfectly than do their more enlightened and civilized neighbors. They despise a thief. They are honest in their dealings among themselves and with strangers, but are simple and credulous and are easily deceived, showing they are not liable to deceive others. They are hospitable in their domestic relations, kind and devoted to each other. They have one good trait that is worthy of emulation—that is, the universal consideration paid by all to the very old and feeble. The extraordinary kind and indulgent treatment of their children is a trait common to all of those northern tribes.—*Pacific Medical Journal.*

SEPTIC LYMPHANGITIS ALONG THE URETERS AFFECTING THE KIDNEYS TREATED WITH ANTI-STREPTOCOCCIC SERUM; RECOVERY.

By J. W. STENHOUSE, M.B., C.M. Edin., M.R.C.S. Eng., L.R.C.P., Lond.

Anti-streptococcic serum is still in the experimental stage. Negative results are numerous and a positive result is therefore of interest. The case about to be recorded was not a hopeful one and as a last resort the serum was tried very much in the nature of an experiment. The coincidence of the combination of quinine in the treatment is perhaps worthy of attention.

A married woman, aged 28 years, gave birth to a child seven years ago and made a very fair recovery. She had a "whitish" discharge for two years, when it became "yellow-like matter" and increased to such an extent that it gave her a great deal of discomfort and pain on walking (I may here interpolate that the husband denied ever having had any venereal complaint). This discharge went on for a couple of months, when she consulted a gynæcologist, who discovered that she had also a urethral discharge which could be expressed on pressure of the anterior vaginal wall. She was treated with astringents to the vagina and urethra and sandal-wood oil internally. She carried on this treatment for above five years, during which time the urethra was additionally treated with numerous drugs, but without any effect. The vaginal discharge was kept in check with the astringents and she could get about with tolerable comfort. About Whitsuntide in 1899 she used protargol for the urethra, and shortly after she had begun to use it she developed cystitis, which lasted for a month. The urine, however, never properly cleared. On July 20th she went into a home to have the urethra treated and had Skene's tubules split open and cauterized. On the 28th she began shivering, had a sore throat, and pains in her limbs. She left the nursing home on the following day. As the throat did not improve she sent for me, but as I was away for my holidays, Dr. E. G. Yonge kindly saw her. He was of opinion that she was suffering from septic tonsillitis and treated her for five days with iron and quinine internally and carbolic locally.

Bicycling had been recommended to this patient for her uterine condition, so she resumed that amusement about August 17th. On the 20th she went for a run of twenty-nine miles, and on her return in the evening she began to shiver and developed another attack of cystitis. She was able to be out of bed on the following day, but in the evening she had a rigor with pains in the limbs and in the right side of the abdomen and back, followed by sweating. The rigors were very frequent during the night and were repeated during the day. She was now confined to her bed and unable to sit up in it. I was called to see her on the evening of the 22d. The pulse was 116 and the temperature was 104°F. Her face was pinched, and the skin had a dirty grayish look. Her abdomen was slightly distended and the muscles on the right side resisted pressure while those on the left were tolerably flaccid. The kidney on the right side was easily palpated; it could be felt to be enlarged and was very tender. A line of tenderness ran along the line of the ureter, and on pressing it over the brim of the pelvis it could be felt as a thickened cord and the pressure gave much pain. The urine had a cloud of pus and there was pain at the end of the act of micturition. The cervix uteri was in a condition of ectropion and the uterus was retroflexed. The heart and lungs were normal. I prescribed 10 grains of salol every four hours, and a mixture containing boric acid, buchu, hyoscyamus, and uva ursi. The next morning her pulse was 94, and the temperature was 101.8°. During the night she had only modified rigors which produced a sensation of cold followed by one of heat. The right kidney was as tender as on the preceding evening, and slightly larger. She kept very much in the same condition all that day and following, the temperature oscillating between 99.8° and 102°. On the 25th the right kidney was larger; it was close to the abdominal wall and very tender. In the afternoon of this day she commenced to have pain on the left side along the ureter to the kidney and by the evening the left kidney could be easily palpated, and was also tender. Some enlarged glands could be felt about the iliac arteries.

I called Mr. J. Collier to see her in consultation. He confirmed the diagnosis, and we thought it had gone on to suppurative nephritis. The prognosis was grave indeed. Mr. Collier suggested that quinine should be tried (five grains every four hours) and urotropine (10 grains three times a day). On the following day the left side was worse and the patient was losing ground. Her face was more earthy-looking and she was rapidly losing flesh and strength, so much so that she could hardly move in bed, apart altogether from the pain which any movements caused her. As the prognosis was so bad I thought that the serum treatment held out a ray of hope, and in any case if it did no good it could not make her worse than she was; so, with Mr. Collier's approval, I determined to make a trial of it. I therefore stopped the quinine and injected into the left flank about twenty cubic centimeters of serum. This injection and the subsequent three were made with all antiseptic precautions—the syringe being boiled and the hands and skin being thoroughly washed and carbolized. The next morning the pulse and temperature had both fallen, the former from 96 to 80, and the latter from 102.2° to 98.2°. This was encouraging. The serum had modified the pulse and temperature more than the drugs. In the evening there was a rise in the pulse to 90, and in the temperature to 101.2°, so I injected ten cubic centimeters of serum into the right lumbar region. Instead, however, of getting the expected fall next morning, the pulse and temperature had both risen—the pulse to 100 and the temperature to 103°—and at 8 P. M. the pulse had further risen to 108 and the temperature to 102.4°. I resumed the quinine every four hours, and injected twenty cubic centimeters of serum into the left lumbar region. On the 29th, at 8 A. M., the pulse was 84, and the temperature was 99.8°; at 4 P. M. the pulse was 84 and the temperature was 101°; and at 8 P. M. the pulse was 84 and the temperature was 99.4°. Twenty cubic centimeters of serum were injected into the right flank. On the 30th the pulse was 68 and the temperature was 98°, and it remained normal all day. The patient was feeling better, and the pains were diminished. On the 31st there was a slight rise of the pulse (to 80), and of the temperature (to 99.8°). On examination I found the left pupil slightly smaller than the right and somewhat oval in shape. She had no headache, but said there was "a slight mist over the left eye." Percussion of the abdomen showed the spleen to be normal in size. The enlargement of the right kidney was diminished, the tenderness was less, On September 1st there was a slight rise of temperature from normal to 99.2°. The left pupil was slightly irregular, the iris was retracted at the upper and inner quadrant, and both kidneys and ureters were less tender. At the seat of injections on the right and left sides there were two extensive patches of erythema which gave the patient great discomfort, especially at night, when it rose up in wheals like urticaria. The intolerable itching was most difficult to control; but what gave most relief, after trying various remedies, was an ointment containing hydrocyanic acid, carbolic and chloroform in lanoline. On the 2d the pulse was 60 and the temperature was 97.4°. On the 3d the right kidney was much smaller, and the abdomen could be more freely palpated without giving much pain. The pupils were normal. The urine was much better, but there still remained the urethral discharge. On the 6th I dilated the urethra with Hagar's dilators till I could get my small finger into it, but could feel nothing abnormal, either cicatrices or pouching. The dilation did good, however, as the discharge from Skene's tubules on one side dried up, while that on the other became serous. The temperature and pulse remained normal during the week until the 11th, when there was a slight rise of the pulse to 82, and of the temperature to 99.2°. Coincident with the rise there was pain in the left leg; the glands in the groin, which had previously been slightly enlarged, were now tender on pressure; there was pain along the line of the femoral artery; the veins in the calf of the leg were enlarged and cord-like; and there was slight œdema of the leg and foot. The thrombosis was treated with elevation of the limb and lead and opium fomentations and the glands with iodine ointment and carbolic compresses, and the condition had practically disappeared by the 20th. The patient felt perfectly well and had put on flesh. The foot required to be bandaged as it became slightly swollen with use. The urethral discharge remained. Five months after the patient stated that she had not felt better for years.

Remarks by Mr. J. Collier.—On examination of this patient, I came to the diagnosis mentioned by Dr. Stenhouse above, mainly from the thickened condition of the ureters. The prognosis seemed to be the very gravest, for the general condition was so extremely bad as to make it appear certain that the kidneys were riddled with small abscesses. The further history of the case after it was seen by me points sufficiently to the general pyæmic state. Dr. Stenhouse and I agreed at once as an alternative treatment to inject the anti-streptococcic cerum, and this was done with a surprising and most satisfactory result. Since the above case in two equally desperate cases—one an adult and the other a child who was apparently dying at the Pendlebury Children's Hospital from acute general pyæmia—I have been delighted with the result of the administration of full doses of quinine associated with repeated serum injections.

Manchester.

THE INDEFINITENESS OF OUR NOMENCLATURE.

By H. A. FAIRBAIRN, M.D.,
Attending Physician to St. John's Hospital, Brooklyn.

As a rule the character of the terms and propositions used to express to us information on a given subject is a fair index of the status of knowledge about such a subject. The use of general and indefinite language gives one the impression of indefinite ideas and, on the other hand, definite and exact terms are the means employed to convey well-demonstrated facts. For instance, there is never any doubt about the language of the geometrician; his proposition, demonstration, conclusion all reflect preciseness; we exclaim immediately on reviewing his work that it carries conviction with it, that it reflects truth, that it, in the true sense of the term, defines. It could not be otherwise, for it deals with questions about which there is no doubt. There are other departments of knowledge whose literature reflects no such exactness, and as we review it we are struck with the obscurity of the nomenclature and are forced into the belief that it is used to depict something which does not rest on a firm basis. In the early history of an art of science the terms used are a fair reflex of the sparcity of facts gathered together; but as time advances and investigation proceeds the nomenclature broadens, is reformed in some instances, in order to keep pace with the progress made.

There are in use to-day many medical terms which are in themselves indefinite. These came into vogue years ago when the knowledge on the subjects denominated by them was vague and very limited. The information since accumulated and established, systematized and formulated, has not been reflected in the old names still used to describe it. We are disposed to think that they do us an injustice and have called forth some of the sarcastic thrusts delivered by critics at our systematic classification. We have not far to look for an example. Typhoid fever is a term still employed to denominate a condition having some point of resemblance to typhus, as its name implies; typhus implying stupor and a condition of prostration. We know to-day that stupor and many other particulars heretofore considered of diagnostic importance have lost their place, as it has been demonstrated that the condition may occur without either. The point the teacher emphasizes to-day is that the condition is due to an infection, that it manifests itself in a variety of forms, and it would be well for pupil and the people at large if this could be kept before the mind by the term used to describe it. Enteric fever has been suggested as more to the purpose than typhoid, as it holds up to view the most frequent pathological lesion. There are objections to this, and we are inclined to the opinion that infection of Eberth's bacillus would more truly state the case. Pneumonia is another illustration. It really indicates or suggests nothing specific. It calls attention to the lungs simply. It is a broad generic term and could be properly used to suggest anything pertaining to those organs. As everyone knows, it is used to specify that process which results from the invasion of the micrococcus lanceolatus, but it is also employed to denominate that condition known as catarrhal pneumonia. Pneumonitis has been suggested as a substitute, implying that the process described is an inflammation. That it is not an ordinary inflammation is quite evident, and the utility of the term therefore questionable in the case of primary and secondary lobar pneumonia. What possible light is thrown upon a subject by such names as Graves, Hodgkins, Addison? We are glad to know of these gentlemen and their distinguished services; so are our intelligent patients. But they will want to know more, and our students will seek better guides when they investigate the troubles bearing such names. We might cite many more examples, such as dysentery, influenza, colic, etc., etc., but they would only go to emphasize the fact that we cling to old landmarks in medicine as in other things, although they have ceased to be appropriate indicators of the progress made. There is a term in very general use employed to describe affections for which it is not easy to discover organic change as a basis. Functional has been adopted to describe them. Its use amounts to an acknowledgment that all the knowledge we have on the subject thus described, is contained in its symptoms, that there is simply a peculiarity or abnormality in the exercise of certain functions, while structurally the part which exhibits the disorder is apparently sound. For instance, there are at times abnormal sounds developed in the cardiac region, over the heart itself, and the great vessels which spring from its base. They are intermittent in character and unattended by the usual accompaniments of valvular lesions, or they may be persistent for a period of time, and a constant venous hum in the large cervical veins may be heard with them. It is not unusual to hear the diagnosis "functional murmur" given to the first and anæmic murmur to the second. There is great reason to regret the use of the term in either case; while the symptoms do not point to a serious condition at present, nor to a bad prognosis, they certainly indicate that there is a faulty action of the most important part of the system. There are at present under my observation some cases which well illustrate the danger in stamping such as functional merely. One, a youth who develops on moderate exercise a systolic murmur at the cardiac apex, some cyanosis and dyspnœa, and unsteadiness in heart action. A distinguished diagnostician has dismissed the case as one of functional disturbance. The dictionary has been consulted by the youth, and he rejoices in that fine metaphysical idea that he is out of order and still sound at the same time. It appears to me that when an organ fails to respond to moderate demands without the development of abnormal phenomena there is reason to suspect the presence of some structural weakness and that there is very good reason for cutting down such demands and, if possible, for endeavoring to strengthen the structure in question.

The statement that there is a functional difficulty must mean one of two things, either that an organ is incapable of responding to ordinary demands or that the demands upon it are such that it cannot satisfy them. The presumption is in favor of excesses or structural trouble of some character. There is a tendency to look slightingly upon such when stamped with the name in question. It presents to the mind of attendant and patient a condition which may be disregarded. Its use calls for more caution than almost any term we have. We think that it should be rarely used. If asked for a term as a substitute we would be at a loss to name a single one. A guarded statement as to the findings in the case, with their possible significance, would seem the best way out of the difficulty.

When we begin to talk to our patients about hysterical blindness, hysterical typhoid, hysterical phthisis, hysterical hemoptysis, and hematemesis, etc., etc., we may well expect to see eyebrows go up. However plain may be their significance to us they will fail to convey correct information to them. They will require explanatory notes. We thought that the climax had been reached in the use of the term when we read in a certain medical journal the account by a reputable man of hysteria in a cat. Pussy had a disagreement with a dog and got a severe bite in her back, and immediatetly became paraplegic. She fortunately for all hands retained control of bladder and rectum. The diagnosis of myelitis was made by the kind-hearted family doctor, but the housemaid, being a Christian Scientist or osteopath, no doubt, dropped the animal out of the second-story window, whereupon it took to its feet and ran away. There was nothing left for our medical friend but to pronounce the case hysteria and send a detailed account of it to the medical press.

That the time has arrived for a thorough reformation in the classification and denomination of diseases is apparent from the change in the modern text-books and the readiness with which they are adopted. The free and easy paths we have allowed to traverse our domain have invited trespass of public and numberless adventures. These latter have come to that that they need no guide and that medicine is a recreation ground about which they may wander at will. There are sign-boards which do not point out the dangers nor the character of the journey. There are some guide books in use which help on the trespass. One in particular states in the preface that a single prominent symptom will lead to the diagnosis of the disease by a simple reference to a copious index appended. Surely it opens the way for every man to think that he can be his own physician. If the diagnosis is a matter of such ease it is not surprising that the pathies and quackeries have multiplied, which attempt to treat the condition so easily discovered and so indefinitely and unscientifically expressed.

SOME REFLECTIONS UPON APPENDICITIS.

By J. O'CONOR, M.A., M.D., T.C.D.,
Senior Medical Officer, British Hospital, Buenos Ayres.

Notwithstanding the results universally obtained by the timely adoption of surgical measures in appendicitis, many still maintain that a large percentage of recoveries follows medicinal or expectant treatment and that surgery is, to say the least, superfluous in those cases which they designate catarrhal or simple appendicitis. Also opinions are by no means in unison as to the etiology of this complaint; some claim the universal provider, uric acid; some attribute it to the irascibility of the bacillus coli; others give mechanical reasons; while not a few, including the writer, consider it to be of mixed origin. I should like to suggest for the consideration of bacteriologists the possibility of the germ (or a congener) of acute infective arthritis (rheumatic fever), which seems to have a partiality for waging war *via* the lymphoid tissue, taking a prominent part in the attack.

The general practitioner may well say, "For modes of faith let graceless zealots fight," but what am I to do or think when called on to treat a case of appendicitis? He may console himself with the idea that the majority of observers agree that the disease is primarily a local one, probably caused by some mechanical irritation which lessens the vitality of the tissues and thus renders them an easy prey to infective microbes, and that this apparently functionless organ is particularly prone to infection, congestion, ulceration, and gangrene on account of its peculiar anatomical formation, limited blood-supply, and trap-door situation. As to treatment, it may with advantage be remembered that "the heresy of one generation is the creed of the next." It appears somewhat paradoxical that pathology cannot be reckoned on to give much assistance in simplifying the matters, for many medical men of high repute refuse to admit the justification, much less the necessity, of examining the affected organ except by touch through the thick layers of the abdominal muscles, and to a great extent they draw their pathological inferences from general clinical manifestations, while others hold that inspection of the lesion is a *sine qua non* in arriving at a correct conclusion. Considering the ubiquitous prevalence of the malady and the thousands of operations which have been successfully performed for its relief, surely such confliction of ideas is not consistent with the advanced state of our science.

From a personal experience of 72 consecutive operations for appendicitis I have learned not to place much value on ante-operative classifications, such as catarrhal, suppurative, and gangrenous, for I have frequently observed that such fine-drawn distinctions are illusory; to say the most they only imply mere transition stages of the same disease, which cannot be differentiated with certainty without abdominal exploration. I should think there are few surgeons who if called into consultation in a case of appendicitis, and finding the patient with a drum abdomen, rapid pulse, and vomiting, would not sum up the condition as perforation with diffuse infective peritonitis, or if they met with a tense, painful, circumscribed swelling in the cæcal region would not diagnose appendical abscess. Place aside these two obvious and late phases of the affection I venture to ask, Is there a physician or surgeon to be found who can define the pathological condition sufficiently correctly on which to base scientifically an expectant plan of treatment? Is it possible to exclude a rapidly thinning stricture? Can early abscess formation between adjacent ocils of bowel be eliminated? Can it be positively stated that the appendix is only congested, not distended with feculent pus, or that it is not rapidly becoming gangrenous, that there is not some foreign body or infective concretion on the verge of bursting into the abdominal cavity, and can the formation of protective adhesions be divined? I make bold to assert emphatically that these questions can only be answered by the introduction of the sense of sight, and that clinical inferences are often miserable delusions in this disease. Imagine the feelings of an educated medical man on finding the patient whom he left at night with a flat abdomen and in a good general condition on his arrival the next morning with a blown-out abdomen and all the symptoms of peritonism—no retreat but the grave. Is this a fanciful picture? I challenge anyone who has had any experience worth mentioning in appendicitis to deny the insidious rapidity with which a "simple" case may become converted into a fatal one.

Some may ask, Why operate in every case when a large percentage undergo spontaneous cure? My reply is: (1) I cannot say at the onset of any case that spontaneous cure will take place; (2) I am unable to guarantee that perforation without previous formation of protective adhesions may not suddenly occur, which complication in my experience is invariably fatal; (3) cœliotomy with removal of the appendix is the most accurate method of diagnosis and cure with which I am acquainted, the operator is to be congratulated for his promptitude if he only encounters the catarrhal variety, and, moreover, the patient is comforted with the assurance that the operation, proved to be a simple one and devoid of risk, insures that he will never again suffer from appendicitis; and (4) I am sceptical as to large numbers of expectant "cures." An appendix once infected is always infected and remains a weak spot, and although in some cases no actual recurrence takes place yet in a great many permanent adhesions have formed around the appendix and the cæcum which cause chronic digestive disturbance with or without dragging pain and tenderness in the right iliac fossa. The appendix during an attack frequently becomes glued to adjoining structures. On two occasions I found it adherent to the right ovary, and in each instance it caused chronic ovarian irritation. Occasionally I found it adherent to the pelvic floor, tying down the cæcum in a tent-rope fashion. In such cases pain, tenderness, and flatulence had been complained of for a long period. Removal of the adhesions and the tent-rope appendix effected a permanent cure.

Another condition which deserves mention is the influence of an abnormally short meso-appendix on the movement and shape of the appendix. On four occasions I operated purposely to relieve chronic indigestion, with pain and tenderness at McBurney's point, and found that the appendix was bound down below the cæcum by a stunted meso-appendix, with kinking, at the point of the distal attachment of the mesentery. In each instance it was impossible to raise the appendix to the surface until the meso-appendix was divided, whereupon it could with facility be lifted out of the wound. It is not hard to realize that each time the cæcum became distended with fæces and gas a kind of tent-rope action came into play and caused the above symptoms. I cannot imagine a more dangerous condition in cases of the supervention of an attack of appendicitis, for it is obvious that stricture and perforation would rapidly take place at the site of kinking. I may mention that the four patients were cured of their chronic trouble by removal of the appendix.

The following case affords a good illustration of such a danger; A few months ago I had the pleasure of being assisted in an operation for appendicitis by Dr. Barry of H. M. S. Pegasus. We found the appendix bound down behind the cæcum by a stunted meso-appendix and at the point of the distal attachment of the latter there was marked angulation. The distal end of the appendix was intensely inflamed and contained a concretion of about the size of a pea, while the proximal portion appeared to be perfectly normal. After removal it was found that there was a stricture at the site of the kink, with ulceration extending through all the coats excepting the serous one; and as no external adhesions were forming it may be reasonably inferred that the operation not only cured the appendicitis but saved the patient's life. He would indeed have been a far-seeing clinician who could have inferred the pathological lesion of this most interesting case.

It would be superfluous for me to mention anything about the danger of intestinal bands forming after inflammation in this region further than to refer anyone interested in this matter to Mr. Treves's most excellent work on "Intestinal Obstruction." Another proof of the difficulties which attend diagnosis came under my observation on November 5th, 1899. A strong young man was suddenly seized with severe pain in the umbilical region on October 26th. He vomited frequently during the next three days and complained of fever and constipation, with pain and tenderness in the right lower abdomen. The first medical man in attendance was said to have diagnosed gastric influenza and administered a purge which acted freely; nothing abnormal was found in the stools. A second medical man was reported to have said that it was inflammation of the liver and advised his removal to Buenos Ayres, which meant a long drive and a train journey of 350 miles. On admission to hospital on November 5th his temperature was 100° F., the pulse was 80, the tongue was furred, and his gait was "down on the right." He volunteered the statement "that he felt better"—in fact, he thought "the trip did him good." Abdominal examination showed that there was no distension or limitation of normal respiratory movement and no redness or localized tumefaction. He complained of slight pain in the right inguinal and umbilical regions, with slight tenderness on palpation, *not* particularly marked at McBurney's point. No tumor could be detected, but there was a distinct board-like feeling of the right oblique muscles, and movement of the right lower limb caused him some pain. On November 6th the morning temperature was 99°, the bowels responded readily to a soap-and-water enema, the tongue was cleaning, muscular resistance was diminished, and the pulse was 76. In the evening the temperature was 99.6°. On November 7th the morning temperature was 98.2°. There was no further development in the abdominal symptoms and he felt "almost well." Diagnosis, convalescence from appendicitis. Considering the out-of-the-way place in which the patient resided I advised the removal of the appendix as a matter of future safety, to which he consented. The evening temperature was 98.6°; the bowels again acted with an enema. On November 8th the temperature and pulse were normal and the patient felt "quite well." Chloroform was administered and on deep palpation a hard tubular form of swelling was found in the cæcal region, extending upwards along the line of the ascending colon. Cœliotomy was then performed; the cæcum presented a normal appearance, but on searching for the appendix the cæcum and the ascending colon were found to be densely adherent on their posterior surfaces to a hard mass deeply situated in the right iliac fossa. The adhesions were being gently separated from the outer side when a sudden gush of fœtid green pus (about four ounces in all) took place, which came from a long, narrow abscess cavity situated directly behind the cæcum and the ascending colon, and extending from the brim of the pelvis almost to the lower border of the liver. The pus was sponged out and the pyogenic cavity was laid open in its entire length. After a prolonged and difficult search the appendix was found to be disorganized and firmly adherent to the posterior surface of the cæcum, with a small perforation on its junction with the latter. (The absence of marked tenderness at McBurney's point I presume was due to the position of the appendix.) The append was cut off flush with the cæcum in order to embrace the perforation and the wound in the bowel was closed by a layer of sutures. A large drainage-tube was placed alongside the cæcal wound and the usual dry dressing was applied. Three days later a fæcal fistula occurred; an abundant discharge of fæces continued for a week and then spontaneously ceased. An uninterrupted recovery followed. I do not take the least credit for the successful result, for I failed to recognize the true nature of the condition until chloroform was administered for quite a different purpose—viz., to remove the possibility of recurrence.

In my 72 cases there have been four deaths—three due to ante-operative perforation with diffuse infective peritonitis and one to pyophlebitis in a suppurative case of one month's duration before admission to hospital. In 26 cases there was suppuration with localized peritonitis, which in some instances had invaded by direct contiguity two or three coils of adjacent bowel. Needless to state, no selective process was adopted in this series, and the death-rate—5.5 per cent.—may not compare unfavorably with other methods of treatment.

It has been my practice for some few years past to operate as soon as possible after diagnosing the complaint. The local skin disinfection having been gently carried out McBurney's cœliotomy is performed, and if any tumefaction is felt the incision is made directly over it. I cannot see any necessity for semilunar or median incisions, for in the majority of cases by careful sponge packing the general peritoneal cavity can be more easily shut off through the oblique incision. Some time ago Sir William Banks called attention to the value of attacking an appendical abscess extra-peritoneally, and my experience tends in every way to confirm the teachings of that distinguished surgeon.

Many surgeons still advocate leaving behind the appendix when obscured by adhesions in the face of pus. In this I cannot agree, for I know of four cases where suppuration recurred, eventually necessitating removal of the organ. I make it a rule never to quit the abdomen when operating for appendicitis without removing the appendix, and on three occasions I proved the value of my resolve, for I discovered a second collection of pus when searching for the appendix which undoubtedly would have been otherwise overlooked. I have over and over again broken down intestinal adhesions and have never yet caused fresh infection, which I attribute to the fact that I strive to let the light into a pus collection and clean up before proceeding further.

The key of the situation is, without doubt, *patience*. It is surprising what changes can be wrought in a foul appendical abscess cavity by five minutes' gentle sponging and a pair of good retractors. The trouble and time taken are amply rewarded when the *fons et origo mali* is brought into view and removed. Leaving a moribund appendix in a living abdomen is not sound surgery.

Buenos Ayres.

A SUGGESTION FOR TABLET-TRITURATE MANUFACTURERS.

By CHARLES J. PROBEN, M.D.

If Hippocrates could be resurrected in order to visit our hemisphere, and view the modern progress of the science of medicine, what bewonderment would befall him! This would specially apply to the subject of therapeutics. Even a century ago remedies for the treatment of disease were largely drawn from the animal kingdom. It is beyond the realm of imagination what a conglomeration of nauseous and repulsive substances the human economy had to contend with. They were scarcely worthy of the name of drugs, and physiology could not support their supposed action. Advance and betterment notably resulted when potent herbs began to come into vogue; recognition that the active principles of these were contained in the extractive matter gave way to the isolation of the active principles inherent in the vegetable kingdom. Tinctures, fluid extracts, and solid extracts marked an era and the dawn of true pharmacy. Isolation of the principles tended to place in our hands drugs both potent and reliable. These alkaloids could be depended upon for their physiological action; aside from their thorough reliability, they could be given to further quicker action and in such ways as to overcome any nauseous qualities. In powder form and in pill form they have for a long time been favorities; the last decade, however, has been responsible for the introduction of the tablet triturate, which is largely due to the enforced competition of manufacturers in placing cheaper products upon the market. They have very much come into vogue and can be conscientiously lauded for exact dosage, effectiveness, and elegance of administration. While the larger number of these tablets are harmless drugs, a minority represent some of the most active alkaloids of our materia medica. Be it remembered that the drug is triturated with sugar of milk, made into a mass by excipients, and divided into the necessary numbers. The majority are white and of the same size, be they inert drugs, harmless drugs, or the most poisonous alkaloids. No means of distinction exists except by a chemical analysis. The wholesale drug manufacturer places all alike in similar bottles, and no exterior difference exists to distinguish one from the other save the label on its face. No regard is had to the poisonous quality of its contents or the inertness. If tablets of morphine, strychnine, aconitine, atropine, cocaine, colchicine, coniine, digitalin, hyoscine, physostigmine, pilocarpine, veratrine, etc., were placed next to some white tablet, such as calomel or some other harmless drug, it would be beyond human comprehension to distinguish between the poison and the non-venomous. The bottles in which the former are contained are not labeled poison. This is the rule of which I have recently convinced myself by inspection of numerous pharmacies. A separate closet, containing the most virulent poisons, which is usually locked and separated from the rest of the drugs, is a necessary adjunct of every well-organized drugstore. Such, however, is not the case in a large number of pharmacies, and I have frequently seen a bottle containing calomel tablets on the same shelf with virulent narcotic poisons. Tablets alike in color, bottles alike in size and color, labels alike in color—no distinguishable feature of one from the other—the arm guided by an overconfident brain can readily pick up the wrong bottle and a mistake is the result. Such was the occurrence of a case two days ago, which hurriedly called me to an infant suffering from tonic and clonic spasms as a result of a mistake of a drug clerk. I am instigated to go into details because of the criminal negligence displayed by the pharmacist in giving one-thirtieth-grain strychnine tablets where a thirtieth of a grain of calomel was ordered by a *confrère*. The infant was given but one tablet, as ordered by the physician, followed by the spastic condition, with cyanosis, interrupted respiratory movements, and cessation of pulse. I repaired to the pharmacy and found the two drugs simultaneously in the same closet, though on dissimilar shelves. At first denial of the mistake, later admission by the proprietor after the little one had passed the critical stage. Comparison of dissimilar tablets as to size, shape, and consistence, the container, etc., divulged nothing to show the difference, save by taste. It dawned upon me that the pharmacist was principally to blame, though the wholesale manufacturer of these goods had absolutely exercised no care to distinguish one from the other, save the label—nothing exterior would indicate the danger lurking within. Gross carelessness in trading with these dangerous goods will never be done away with until lawful compulsion is exacted. Regarding the putting up of poisons, there exists no statutory law in any of the States. The manufacturer should be compelled to adopt a container conspicuous in some respect—different from the ordinary bottle. While the sale of poisons is lawful for certain purposes, when registry is exacted, it is also within the penal law to rcognize negligence criminally and designate both misdemeanors and felonies. This evil will persist unless the physician insists upon impressing on the manufacturer the necessity of adopting a container of some conspicuous form which will at once make it visible to the eye and sensible to touch that the contents of the bottle are poison. A certain color of bottle, with sharp teeth projecting from its sides, so as to be at once conspicuous even in the dark, with a cork of similar construction, would certainly quickly impress everybody as something unusual. White letters upon a dark-red background for the label, as requisite in this State for the sale of poisons, are conspicuous indeed. While these appear as minor details for the original container, the patient is not in any way protected in recognizing a mistake if the tablet triturates are dispensed in a cardboard box. From time immemorial, and internationally, red has always been adopted as the danger signal in the lights of locomotives, steamships, trains, etc. Would it not be a good plan for us to adopt a similar rule with regard to tablet triturates, pills, and other solid means of giving drugs? Have the manufacturer at least adopt it for the more narcotic drugs, especially the alkaloids, and color every one of them red. At once a mistake would be recognized by pharmacist, physician and patient, if he received the necessary instruction. Objection may be at once raised that the patient should be unconscious of the character of the drug and should not be unnecessarily alarmed. True, but need we divulge the character of the drug save to say, "Your tablets will be of red color?" This apprehension is really meagre compared to the numerous mistakes a well-systematized order would eliminate. Such coloring would immediately be conspicuous, and is not in discord with the fact that but few drugs exist of a bright-red color which are worked into tablet-triturate form. Let a leading manufacturer start coloring all the narcotic alkaloid tablet triturates red and announce the fact, and others will soon follow this innovation. If a law were enacted in this State to compel narcotic alkaloid tablet triturates to be colored red, and to be so dispensed, they would quickly come to us in that condition. While it is simplicity itself, with inconvenience to none, it may in future be the cause of saving many a life. Culpable negligence is an ally of felony, though never put to the test. But one drawback occurs to me—that is, that if one of these narcotic drugs is dispensed with some other article, which may discolor it, so as to make our law nonoperative, I would suggest that it be coated with a red-colored sugar mass. Chocolate coating seems elegant, but it does not convey to our minds the danger which red invariably does. Only if manufacturers in general adopted the same plan, so as to make it universal, would these suggestions be of any use. Hence, progressive manufacturers, be on your mettle; improve your service to a faithful community that is the means of your sole subsistence. Give us tablet triturates in which danger is distinguishable, and significance of color at once implies caution. The saving of merely one life may gain advantage over you. Throw aside *innocuous desuetude* and enhance the reputation of elegant prescribing.

A PECULIAR CASE OF ABORTION.

By B. L. TALIAFERRO, M.D., Richmond, Va.,
Instructor in Physiology, Medical College of Virginia.

X———, negro girl, aged 18, unmarried, came to the gynecologic room of the City Free Dispensary on November 23, 1899. General condition good; constipated; no bladder symptoms; no pain; missed last two menstrual periods; has had morning nausea, etc. On being asked for what reason she had come, said she had "falling of the womb," which had been noticed for the first time the previous morning, when she started out to her work. The night preceding she had taken medicine which she had obtained from a druggist to bring on her "flow," the absence of which was causing her no little uneasiness. The nature of the drug could not be ascertained as the bottle had been destroyed.

The nurse having prepared her, I proceeded to examine for the "fallen womb." The external genitals were found normal in appearance. On separating the labia majora, a slender, black mass was seen projecting from the vagina. Examining this more closely, I was surprised to find that it was the left foot of a fetus. A bivalve speculum being introduced, the thigh of the fetus was seen projecting from the os uteri, which was firmly contracted on it near the groin. She claimed that she had suffered no pain, and had been doing her usual house work up to this time.

She was taken to the Old Dominion Hospital and prepared for immediate operation. Under chloroform anesthesia Dr. J. P. Massie, the obstetrician to the hospital, dilated the cervix, and delivered the three-months' fetus. The placenta, which was fairly well formed, was adherent, and had to be stripped off with the finger. The uterus was then curetted with a placental curette, all retained membranes and parts of the placenta being removed. The vagina was then irrigated with a weak solution of bichloride of mercury, the uterus packed with sterilized gauze, a light packing being left in the vagina, and the patient put to bed. As soon as she could swallow, a drachm of fluid extract of ergot was given her. The day following her temperature was 99.8 degrees, pulse 90, and she had slight pains over regions of uterus. The packing was removed from vagina and uterus, and a hot vaginal douche of bichloride of mercury (1-4000) was given. The second day, temperature and pulse were normal. There was no further rise of temperature and she was allowed to resume her usual occupation in two weeks, having been kept in bed the first seven days.—*Medical Register.*

FOUR CASES OF DIABETES MELLITUS OF APPARENT BACTERIAL ORIGIN, AND THEIR SUCCESSFUL TREATMENT.

By J. P. SHERIDAN, M.D.

In the latter part of 1898 a writer in the *Medical Record* related his experience with bichloride of mercury in the treatment of diabetes mellitus and advanced the novel theory of the bacterial origin of this affection.

At the time of publication of the article in question I had some diabetics under treatment. As a moderately rigid antidiabetic diet and the time-honored remedies did not check the glycosuria in my patients, I adopted the newly proffered theory and eagerly prescribed the advocated chemical.

To-day, after a year's trial of germicidal remedies in diabetes, I have become a firm believer in the bacterial origin of diabetes. It is true, the bichloride of mercury did not prove a success in my hands, but this only tends to demonstrate the existence of a peculiar diabetic toxine, which has to be combated by other means. This toxine, in my opinion, is particularly apt to attack the nervous matter, which in turn gives rise to the well-known disturbance of metabolism in diabetes—namely, preventing the deposition of glycogen in the liver and muscles and causing its discharge by the kidneys in the form of grape sugar. The irritation of the vasomotor centers, to which may be attributed all the symptoms of diabetes, seems to be caused by this toxine. It is plainly the physician's duty to eliminate the toxic influences, for he thereby relieves the irritation of the nervous centers. However, he must be most careful in the selection of the proper remedy and in the administration of its indicated dose. The failures in diabetic therapy have to be ascribed either to a wrong medicine or its improper administration, or to both. The ideal antidiabetic drug should not only exert distinct germicidal and antiseptic powers, but should be a powerful alterative. At the same time the system should not become weakened and emaciated by its prolonged administration. On the contrary, the ideal diabetic remedy should afford great tonic properties.

Bichloride of mercury and auri et sodii chloridum, which latter is so much lauded of late by a Chicago physician, possess some of these desiderata, but neither proved of any success in my hands in the treatment of diabetes mellitus. This non-success is due to three factors:

A. The specific toxine of diabetes is affected only by a specific antiseptic.

B. Bichloride of mercury or auri et sodii chloridum, when pushed to their physiological tolerance, do not effect the decline of the glycosuria.

C. Bichloride of mercury as well as chloride of gold and sodium, when administered for any length of time and in larger doses, reduce the oxidizing power of the red blood cells, thereby weakening the system and producing rapid emaciation.

The remedy answering all the demands for an ideal antidiabetic I find in a combination of bromide of gold with bromide of arsenic, called by its makers "arsenauro." This preparation undoubtedly exerts a specific influence upon the bacteria and the toxine of diabetes mellitus, which is elucidated by the following four cases:

Case I.—Mr. C. L., aged fifty, American, clerk, consulted me on June 8, 1898. Family history was negative. Patient complained of polyuria, the existence of which dated back about three months. The frequency in urination he thought to be due to a stricture, the possible result of a neglected gonorrhœa. Patient had a moderate appetite, felt quite thirsty at times, and had lost some weight. The urine (which was voided to the amount of about seven pints daily) on June 10, 1898, showed a specific gravity of 1.038 and contained 7.1 per cent. of sugar, as ascertained by means of Stern's urinoglucosometer. A restricted diet and the administration of codeine caused only a moderate improvement of the symptoms. Bichloride of mercury, which was given for the last three weeks of December, 1898, in the doses recommended, not only produced no beneficial influence whatsoever upon the diabetic condition, but actually aggravated the condition of the patient. Early in July, 1898, my attention was drawn to the chloride of gold and sodium, which was handed to the patient in tablet form and administered first in doses of a fiftieth of a grain. The dose was gradually increased to a twentieth of a grain. After five weeks' trial of this drug it had to be abandoned, as the condition of the patient had become alarming in the meantime.

At about this period I ran across an article in the *New York Medical Journal* regarding the use of arsenauro in diabetes and determined to test this product, having previously used it with satisfactory results in malarial toxæmia.

On February 7, 1899, eight drops of arsenauro were given in half a glass of water three times daily. The restricted diet was ordered to be continued. Patient reported to me in one week. The glycosuria and polyuria were greatly diminished. The feeling of thirst was not experienced any longer, and he expressed himself as feeling perfectly well. The dose of arsenauro was gradually increased until he reached his full limit of toleration, which supervened at fifty drops. The quantity was lessened to forty-five drops, and continued in this dose for sixteen weeks. After this period I examined the urine, which revealed a specific gravity of 1.020 and was absolutely free of sugar. Patient was discharged as cured, with the instruction to continue the arsenauro for at least six months.

Case II.—M. H., a woman, aged thirty-four, American, unmarried, came to consult me September 11, 1898. In July previous, during the hot spell, she perspired greatly and suffered from excessive thirst. Her weight, which normally was a hundred and sixty-five pounds, had diminished to a hundred and thirty-five pounds. Frequent micturition was distressing her greatly. Appetite was voracious for some time and her strength gradually declined. When first seen by me the daily quantity of her urine amounted to eight pints. Specific gravity, 1.046; sugar, 7,538 grains a day. She complained of incessant thirst, inordinate appetite, pain in back, and extreme feebleness. She was put on a restricted diet on September 20, but no medication given her. Patient improved somewhat, but not sufficiently. In December, 1898, bichloride of mercury was given and the same diet continued without effecting any noticeable change in the patient's condition. In February, 1899, she was put on arsenauro, and the same diet still continued. The medicine was started in eight-drop doses three times daily, to be taken in a glassful of vichy water. Ten days after, great improvement had taken place. The urine became reduced to forty-nine ounces, specific gravity 1.028, and the sugar output to two hundred and ten grains in twenty-four hours. After this the dose of arsenauro was gradually increased until the patient reached her full physiological limit; this took place at forty-drop doses—that is, after the administration of two drachms a day. Patient was instructed to occasionally discontinue the administration of the remedy for twenty-four hours, and then to start again on thirty-five drops.

This latter dose was taken for some months with the result of rendering the urine entirely free of sugar. She was advised to continue with the medicine for at least six months longer. I examined her urine of late and found it absolutely normal and free of sugar.

Case III.—H. E. B., a man, aged thirty-seven, American, railroad conductor, consulted me in March, 1899, on account of an irritable bladder. Patient was compelled to urinate quite frequently during the day as well as during the night. His other symptoms left no doubt as to his real affection—diabetes mellitus. The disease, so far as I could ascertain, dated back for about a year and seemed to be devoid of further complications. The quantity of urine voided varied from twelve to fifteen pints a day, with an average specific gravity of 1.042. Sugar averaged four thousand grains for the twenty-four hours. The treatment consisted in restriction of diet and the administration of arsenauro, ten drops of which were ordered to be taken in half a goblet of water three times a day. This dose was gradually increased until patient took sixty drops three times daily. When this quantity, three drachms, was taken every day, the patient's lids began to puff and his bowels became loose and caused griping. The medicine was discontinued for twenty-four hours, but again ordered to be taken in fifty-five-drop doses. Patient had taken the fifty-five-drop doses for eight weeks, when I again examined his urine, which contained only a trace of sugar. One month later he was perfectly well, and all vesical irritation had disappeared—in fact, I pronounced him well. I advised patient to report to me from time to time, but to continue the arsenauro for at least six months.

Case IV.—B. R., aged forty-seven, a woman, unmarried, American, milliner, thin and emaciated, able to attend to her business, consulted me April 12, 1899. Patient complained of great weakness, which had gradually increased for several months. She had excessive thirst and had voided a greatly increased quantity of urine, but her appetite was moderate. Her skin was dry and she complained of intense pains in the calves of her legs, especially in the morning. There was distressing pruritus vulvæ present. The specimen of urine sent to me for examination presented a specific gravity of 1.045 and contained 8.1 per cent. of sugar. I restricted the patient's diet as to starches and sugar and placed her at once on ten-drop doses of arsenauro, to be taken in a half tumblerful of water three times daily. After one week the dose of arsenauro was increased three drops every day until she reached its toleration. Physiological saturation was obtained when forty-five drops were taken three times a day. The administration of the remedy was then stopped (as I am in the habit of doing) for twenty-four hours, after the lapse of which it was again ordered to be taken in forty-drop doses. This dose was kept up for six weeks. On July 3 she had gained seven pounds in weight; uranalysis demonstrated entire absence of sugar; the pruritus had entirely disappeared, and there were no evidences whatsoever of symptoms pertaining to diabetes mellitus. Patient was advised to continue the medication for at least another six months.

The four cases which so readily yielded to this antitoxic treatment were apparently of bacterial origin. Arsenauro, by saturating the system, arrested bacterial activity, or killed the germs, or neutralized their toxines. However, only by saturation with the proper medicine—and, by the way, arsenauro is the only powerful alterative neutralizer which can be pushed to an almost incredible dose without doing bodily harm—can such results as are recorded in the foregoing be obtained.—*N. Y. Med. Jour.*

A CASE OF APPENDICITIS.

A privilege of examining the early appearance of the gut after a successful end-to-end anastomosis is unique and deemed of sufficient interest and importance for a detailed report.

Rupture of Gangrenous Appendix; General Peritonitis; Incision and Drainage; Fecal Fistula; Resection with End-to-End Anastomosis; Ventral Hernia; Herniotomy; Recovery.—F. F., age 10, white male, entered St. Alexis Hospital for operation for acute appendicitis. He gave a history of having had the attack seven days previous to his entrance. The entire abdomen was greatly distended and exquisitely tender. The pulse was 152 and thready.

He was anesthetized and quickly operated. The pus under tension spurted out on opening the peritoneal cavity; the gangrenous appendix was readily found and removed. The opening was made wide and the cavity washed out with salt solution and extensive long gauze siphon drainage inserted.

The case seemed almost hopeless and hung in the balance for about two weeks, after which he slowly improved. In the third week a fecal fistula developed, which, on account of the intensely irritating character of the discharge, was diagnosed as being of the ileum. Again, for about two weeks the prognosis was most unfavorable. After more than a month of suffering from the extensive excoriation of the skin over the whole area involved—it all becoming raw and bleeding—an attempt was made to close the opening in the intestine by lateral suturing, but this failed. Again resorting to all possible expedients, the mother as well as the little patient insisted upon resection. I happened to have mentioned and described this operation to a professional friend while looking at the wound one day, and ever after, on my entering the ward, the child would beg and even cry for "resection."

Under chloroform anesthesia the intestine was separated for some distance both above and below the fistula, and resected near a basal supplying artery on each side. End-to-end anastomosis was then made, using catgut for mucosa and silk for the peritoneum. Both the large and small coils of intestines were invested closely with adhesions, and these were not disturbed. The original opening required but little modification and was allowed to remain open as before. Union was prompt and the abdominal wound soon closed.

On his leaving the hospital, arrangements were made for operating upon the hernia that was sure to develop. On September 28, 1899, eight months after the original operation, the hernia was closed. At this time his condition was good, pulse regular, rhythmic, of fair tension and volume, rate 90. The old scar was six and one-half inches long and three and one-half inches wide at the widest point. The urine was normal and bowels regular. The red corpuscles numbered 4,860,000 and the white 7,000.

The operation consisted in dissecting out the entire scar and all the cicatricial tissue. The edges of the fascia were retracted far from the margins of the wound—this was especially marked on the inner side. On exposing the intestine the point of resection was found, the lumen was narrowed to an appreciable degree only, the most distinguishing mark being the whitish line at the point of union. The blood vessels which had served as landmarks for the point of resection were easily identified and their branches were easily anastomosing. The extensive adhesions among the intestines observed at the time of resection had almost disappeared. Primary union followed and the boy is now well.

The reason that almost all of the bowel contents escaped during the existence of the fistula was on account of a valve-like reduplication by partial prolapse of the mucous membrane, thus shutting off the distal bowel.—*Crile, in the Bulletin of the Cleveland General Hospital.*

STRICT INDICATIONS FOR OBSTETRIC OPERATIONS.*

By C. A. VON RAMDOHR, M.D.,
Professor of Obstetrics, New York Post Graduate School, etc.

Mr. President and Fellows of the Obstetrical Society:

Listening to some remarks of a fellow at our last meeting, informing us that some Maternity Hospital used rubber dilators in about 3 per cent. of their cases, it struck me that it would be of the utmost value to show the readers of such remarks that what is proper to do in a hospital in showing students the various instruments and devices for relieving suffering, it must always be made clear that these operations are partly performed for their benefit; of course without hurting the patient, and the same operations may be absolutely contra-indicated in private practice. Thus a forceps may be applied in a lying-in institution perfectly properly for instruction without a strict indication—but always granting strictly scientific, expert supervision, because the absolute benefit derived by the student does not compare at all with the hypothetical injury of the patient. It is perfectly possible and proper for an expert to perform dozens of Duehrssen operations for bloody dilatation with the best assistance and the best skill without infecting the patient, when a general practitioner would have to stay many hours at the bedside and wait for a natural dilatation. Again an expert may make a record in symphyseotomy while the general practitioner would kill the same number of infants and mothers by following his teaching.

Now all knowledge is begotten by experience or instruction, either by precept or ex cathedra. All fellows of our Society are teachers, are sowing their seed broadcast throughout this country—but very little fruit is harvested in the end. We relate our experiences in our Society and have them published. We invite people to our operations and are looked upon as great operators, or we go directly to our pupils and teach them didactically or clinically. There is a great deal of difference in teaching an undergraduate, a young graduate, an older man, or a specialist, and yet we hardly ever separate our remarks; on the contrary, we try to make them fit the whole profession.

How would you, for example, consider a statement in one of our newest text books on obstetrics for students and practitioners, where the minor degree of pelvic contraction of the superior strait at the conjugate are put down 9½ to 8 centimeters, and where the gentleman repeats in brackets for the benefit of his readers, that this corresponds in inches to 3.7401 to 3.1496. If this expert may be able to measure these fractions of inches he is welcome to his knowledge, but he is wrong to burden the mind of the student with such minute details which one out of a million will ever retain. The bad results from such teaching I have unhappily too frequently seen in my professional experience. Right here in New York city, at the center of medical instruction of the Continent, there still occur and have been occurring thousands of cases of puerperal fever brought on by too frequent and injudicious operations. I see in my own consulting practice at least twenty-five such cases a year, and in a large number too early interference without strict indication is primarily responsible for the disease of the patient. On the other hand, in my connection with the Post Graduate School, I have had occasion to give instruction to several thousand practitioners of medicine and found those remarks on strict indications most appreciated by them. This state of affairs certainly ought to incite us to serious consideration.

---

* Read before the New York Obstetrical Society, December, 21, 1899.

First of all by understanding that many remarks which are simply debating speeches are not taken by the profession in general as such, but are occasionally followed as gospel by some into whose hands the unhappy patient may fall.

Secondly, by not making general rules in a specialist's meeting for everybody, but differentiating to whom we are talking and laying stress on this fact.

Thirdly, by giving undergraduates only the strictest general indications instead of giving them vague and devious roads by which to arrive at the same result, a reasoning which they are not prepared to appreciate.

All obstetric operations are easy of performance if done at the correct time and for a proper indication.

Now, what text book gives the proper indication to a man without experience? A high forceps operation done by an expert with an axis traction forceps is easy of performance for him, but put this same instrument—made for an expert—into the hands of an inexperienced practitioner and he will try to get results which the original inventor had never thought of. A low forceps, on the other hand, can be performed by any individual, and will do the patient no harm, barring an incidental tear, which can also be remedied by the same physician.

Again, symphyseotomy, if done with all requisite assistance, with all the caution in expert hands, gives excellent results, but performed in dirty quarters, by inexperienced operators where time might have given the same result, is a more dangerous proceeding than performing version in a neglected shoulder case. The indications in our text books talking, for example of forceps, are so complicated that the young physician gets absolutely bewildered, and applies his instrument a great many more times than is absolutely necessary.

Now, all modern obstetricians agree that any interference, any too frequent examination, or any unnecessary operation increases the danger to mother or child. Therefore, if for no other reason, operations ought to be avoided wherever possible.

I think we can put all the indications into this rule: "Whenever mother or child are threatened with danger, interference is necessary and indicated."

That means whenever the fœtal heart sounds are either increased by 20 or reduced by 20 a minute, whenever meconium appears in head presentations, whenever a tense head swelling becomes doughy, this shows that it is time for the infant to be extracted. On the other hand, when the mother shows an increasing temperature, a heightened pulse, increasing respiration, or sign of collapse, such as hemorrhage, interfere on her account.

The usual mistake in the beginning of labor is the too early artificial dilatation. Unless labor has fully set in and membranes are ruptured, we ought to wait for the obliteration of the cervix and for the dilatation of the os, a thing that is not generally separated in the remarks which are made about dilatation.

Emptying the bladder will frequently help to obliterate the cervix and dilate the os where an artificial dilatation would be absolutely out of place. The subjective symptoms of the hysterical patient, or the pleadings of the family, or the impatience of the physician ought never to be taken into consideration. A dilatation is only necessary if the confinement is to follow immediately, made necessary by the condition of mother or child.

Forceps ought never to be employed except by an expert unless the head is engaged in the pelvis. This will exclude all those cases of deformed pelvis on account of which the head cannot descend, as well as all those cases of monstrosities on part of the infant where the head cannot pass through. It will also exclude any mal-presentations.

Version is either performed to correct a mal-presentation of the fœtus or as a preliminary to quick extraction. This indication will again exclude such cases of contracted pelvis which make it impossible for the infant to pass.

Craniotomy nowadays is only performed on a dead child, and certainly is preferable to an attempted version late in labor or to a symphyseotomy in unfavorable surroundings.

Elective Cæsarian section ought only to be performed by expert laparotomists in the very best of surroundings.

The indication for a symphyseotomy can only be put by an expert obstetrician, and the operation ought never to be performed except by an aseptic operator with a full staff of trained assistants.

The absolute indication for Cæsarian section will be best appreciated if we keep in mind that a medium-sized hand cannot pass through the superior strait. The indications for abortion or premature delivery ought to be much more strictly observed. No vomiting in pregnancy ought to be called uncontrollable until after failure of the usual remedies rectal feeding has been tried.

One of the finest points in choosing the operation is a medium-sized pelvis of three and a half to three inches conjugate diameter, where premature delivery, version and extraction, symphyseotomy or elective Cæsarian section have been compared. The same with the placenta prævia.

Permit me for illustration to recite three cases happening to me some time ago in succession, where three different ways led to the same result, but where each road was indicated by the correct marks.

Case 1. I para, fainting, husband left, nurse had not arrived, head not engaged. I delivered her at once by quick version and extraction.

Case 2. III para. Roomy pelvis, membranes not ruptured, pains good, strong and regular, head presenting well, not engaged, quite an amount of hemorrhage. Membranes were ruptured and patient was confined spontaneously within ten minutes.

Case 3. II para. Cervix not quite obliterated, but dilatable, head-presentation, head not engaged, very little hemorrhage, good surroundings, good assistants. Bimanual version and easy extraction an hour afterwards.

I think if I had reversed this order of proceedings I would not have succeeded in saving mothers and children.

Gentlemen, if I have succeeded in calling your attention to the fact that it is not the operation itself, but that the indication, the condition of the patient, the surroundings are the difficult factors which save or kill the mothers and children; if I have succeeded in calling your attention to the fact that a series of brilliant, successful operations against the rules, or experiments to devise new rules are followed by a crowd of imitators —without your brilliant skill or power of initiative—whose result will prove the very opposite of your intention; if I have succeeded in convincing you that a sharp repartee in debate at a specialist's meeting may work immeasurable harm to some readers of the proceedings; if I have called the attention of the obstetric teachers, not only members of this society, but of the country, to the fact that the teaching of strict indications lies at the bottom of the whole teaching of obstetric operations, I have not pleaded in vain.

HOW TO PREVENT AND HOW TO TREAT UNUNITED FRACTURES.*

By DR. A. C. BERNAYS, of St. Louis.

My experience is based on notes of twenty cases of ununited fracture of the femur, twelve of the humerus, eight of the patella, eleven of the tibia, six of the ulna, one each of the radius, the metacarpal bone of the index finger, the clavicle, and two of the inferior maxilla. These were treated in a surgical practice of twenty-three years.

The vast majority of all cases is due to a misunderstanding and a consequently improper or rather insufficient method of treatment. The impropriety and the insufficiency lie in the fact that the methods which were applied did not give the complete rest required to get union by bony consolidation.

The greatest stress must be laid upon this point, and it must never be forgotten that repair takes place in all diseases or injuries most quickly and satisfactorily under the influence of rest. When complete rest can be given to the injured tissues, repair takes place in a normal way, without fever or constitutional or local disturbances. Hilton, as long ago as in 1867, proved in a most careful study that under the influence of rest there is absence of pain. His little monograph, "On Rest and Pain," is one of the classics in English medical literature.

---

*Abstract of paper delivered at Des Moines, Iowa, at the ninth meeting of the Western Surgical and Gynecological Society, December 27, 1899.

I will go a step farther, and will say that the reason why the aseptic and antiseptic methods of wound-treatment are better than all previous or older methods, is because they keep away from wounds the most mischievous agents of unrest that can possibly affect wounds—bacteria or their products.

To translate the phrase, "to give rest," into practical surgery, must always be the chief aim of the art of surgery. The surgeon who practices his art in such a manner as to secure the most perfect rest possible under the circumstances, for the diseased or injured parts which he treats, will be the most successful surgeon.

In the discussion, Dr. Bernays said that he believed the most valuable parts of his paper, and that part which would attract most attention, was the advancing of this observation. He went on to show that the entrance of bacteria or their toxic products into wounds were responsible for that commonest form of unrest which is known as wound infection, inflammation and suppuration. In the presence of these we have abnormal, painful and slow healing, because the tissues are not at rest. They are irritated and are kept at work incessantly eliminating the poisonous irritating substances. In their absence we have normal, painless and quick healing. This is the real reason why the antiseptic or rather the aseptic method of wound-treatment is the best. It is best because it gives most rest.

All cases of ununited fracture which are due to insufficient methods of treatment are curable; they can be cured by proper methods. The latter must insure the most complete rest, and, as a matter of course, those methods which fail to give the amount of rest necessary to produce or permit of repair must be given up. All cases of non-union which are not cured by proper approximation and immobilization are incurable and are due to some unknown or to some of the well-known constitutional vices, such as the different forms of malnutrition, cachexia and debility. It is clear that approximation and apposition, followed by proper fixation and immobilization, are the methods which we employ to achieve rest in simple fractures. The same principles govern the treatment of compound fractures, but in addition we make use of such methods as will insure asepsis by means of antiseptics alone, or by means of antiseptics and drainage. Asepsis insures tissue-rest, keeps away the irritants known as bacteria and toxines. An aseptic compound fracture can be treated like a simple fracture, but one must be very sure that there is no infection of the wound before closing it up without providing for drainage. The cases in which this is permissible have been very rare in my experience. The following were the theses formulated by the doctor in closing his paper:

First.—The antiseptic and aseptic methods of wound-treatment are better than all previous methods, because they help to insure physiological rest to injured tissues by preventing the condition of unrest known as infection.

Second.—Non-union of a simple fracture is always due to a constitutional vice, if it follows after proper and long-continued approximation and fixation.

(*a*) Non-union can, therefore, always be prevented by proper approximation and immobilization in the absence of a constitutional vice.

(*b*) It follows, then, that an unknown or a known form of constitutional vice must exist in cases where non-union results after proper approximation and immobilization of a fracture.

(*c*) It is furthermore clear and must be maintained by all surgeons that if proper approximation and immobilization is practiced and continued for a long time, the attending surgeon cannot be held responsible for a resulting non-union. The non-union must have been due to an existing constitutional vice which we cannot always recognize.*

Third.—If after a certain length of time the dressing, cast, splint, or apparatus is removed and non-union is found, there are only three conditions possible:

(*a*) The dressing, cast, splint or apparatus failed to properly approximate and fix.

(*b*) The time of treatment was tóo short.

(*c*) There exists a constitutional vice.

The first of these three possibilities is by far the most common, and is the cause which, when recognized, can be easily removed.

Fourth.—After the use of any of the known methods of treatment of ununited fractures, be they the simple bloodless friction of the ends or any of the bloody operations, such as drilling, nailing, wiring, sawing or clamping, approximation and immobilization must be maintained in order that bony union or consolidation may take place.

Fifth.—The so-called ambulatory treatment of fractures of the lower extremity, while often giving good results, will be followed by delayed union or non-union more often than the treatment in bed, because of failure to secure proper rest.

Sixth.—In old cases of non-union of simple fractures it is a good plan to save all of the chips or sawings of the bone which are removed when preparing and shaping the ends, and to replace them between and around the fragments or ends of the bone before removing the Esmarch bandage. After the tourniquet is removed, the whole wound and the spaces between the fragments and chips will be filled with blood, and if one has been aseptic the best plan will be to close the wound entirely and put to rest with a view of leaving the dressing untouched for a period of from seven to ten weeks.

---

*I have seen a few cases of non-union in children and young people in which the well-known forms of constitutional defects or vices could apparently be excluded, and in which non-union was evidently due to some general pathological condition of which we have no knowledge. There was simply no reparative action around the ends of the broken bone at any time after the accident, in spite of the most persistent treatment. During periods of time extending over several years all rational methods of treatment proved unavailing and there never was an improvement of the flail-joints.

Seventh.—In cases of fracture of the long bones, I believe that the use of an anæsthetic for the purpose of getting perfect apposition and fixation is indicated.

Eighth.—The old rule that the joint above and below the fracture must be included in the immobilizing apparatus, cast, or splint, can never be safely broken. It is a good rule, and should always be observed in the treatment of delayed union or ununited fractures.—*Interstate Medical Journal.*

THE SAFEST AND MOST EFFECTIVE OF HYPNOTICS.

By JOHN BUXTON CARR, M.D., Old Sparta, North Carolina.

The two essential properties in an hypnotic are, first, its safety, and second, its efficacy. Having had more experience with trional possibly than some of the profession, a few facts in regard to its action may not be amiss. I can assert most positively that trional is safe, and am equally positive of its efficacy. It will produce sleep in a great many cases where morphia, chloral, or the bromides fail completely. Occasionally we meet with a patient who has a weak, nervous heart, so that we are afraid to give chloral; another in whom morphia is contraindicated for various reasons, and who is weak and almost prostrated for want of sleep. In these cases, if trional be employed, you will find it to act more than happily. I have often been surprised in giving trional that the heart bears it so kindly; instead of depressing it, it seems to give it a better tone. I have never found trional to depress the heart. It seems remarkable, therefore, that in a recent article in *Merck's Archives*, Dr. H. C. Wood, of Philadelphia, should have attempted to cast discredit upon the safety of trional, by collecting nine cases from the literature in which poisonous symptoms are alleged to have followed its administration. This cannot but appear strange to an unbiased observer, in view of the fact that trional has now been used in thousands of cases with perfect safety. Moreover, a careful investigation of these alleged cases of trional toxemia shows that in almost all the drug was employed in excessive doses, or during long periods, with total disregard of the well-known directions applicable to its use in protracted insomnia. Professor v. Mering, one of the foremost neurologists of Germany, several years ago undertook a collective investigation, both clinical and experimental, as to the effects of trional. In his article published in the *Therapeutische Monatshefte*, August, 1886, he quotes the observations of Beyer, who says: "It may be called a brilliant result that, out of the many thousand patients in every locality who have been treated by trional during the past five years, toxic effects, so-called, have been noted in only a bare half-dozen; the aspect is still further improved if we subject these six cases to a closer examination." In commenting upon this statement Professor v. Mering says: "That Beyer's view of the subject of poisoning by trional is correct is supported by the fact that, while the use of trional has increased to a manifold extent, the number of unfavorable experiences with this hypnotic has not risen." In another place in his article he says: "I have not been able to recognize any unpleasant sequelæ from trional, although I have used it about a thousand times. In some cases it has been continued for three to four months in doses of 15 to 25 grains every two to three days without any injurious effect."

When it is remembered that the clinicians who contributed to this collective report include such distinguished neurologists and alienists as Professor von Krafft-Ebing, of Vienna; Professor Hitzig, of Halle; Professor Kahn, and Professor Van Noorden, it must be assumed that trional, if properly administered, is, practically speaking, a perfectly safe hypnotic.

In this country trional as an hypnotic has been constantly gaining ground. Among those who recommend its use, I would cite such well-known authors as Weir-Mitchell, B. Sachs, R. E. Edes, H. P. Loomis, W. B. Pritchard, R. Bellamy, D. Inglis, and R. Ferguson.

In a recent article in *Merck's Archives*, H. P. Coile, Professor of Clinical Medicine, Tennessee Medical College, states, that in his extensive experience with trional he has never seen any unpleasant or dangerous symptoms attending its use, and believes that in reasonable doses it is free from danger. The safety of trional is moreover shown by its extensive use in the sleeplessness of children, in which it has proved a perfectly innocuous hypnotic.

As regards the appearance of hematoporphyrinuria after the administration of trional, it would appear from the experiments of Bakoen on animals that this condition cannot be produced experimentally, even under the use of enormous doses (see Drews, Die Heilkunde, 1898). Von Mering's experiments which were undertaken on a large number of animals also showed that hematoporphyrinuria cannot be produced intentionally, nor even under conditions in which the nutrition is depressed. This author moreover believes that with the exercise of a little caution hematoporphyrinuria can be surely avoided.

My experience with trional has comprised most of the forms of insomnia in which its use has been found indicated. From the large number of cases I have observed in my private practice, and connection with asylum, as reported by its superintendent, Dr. Geo. L. Kirby, I have selected only two for the sake of illustrating the efficacy of trional in a class of cases which are not readily amenable to the influence of hypnotics.

C. B. J., aged 36, had been drinking heavily for several weeks, and was in the habit of letting himself down as easily as possible with morphine. His nervous system was thoroughly racked, and the morphia failed to have the desired effect. He had slept only about three hours in seventy-two. One dose of 20 grains of trional produced refreshing sleep, and after repeating the dose for three nights his nervousness completely disappeared.

J. T. D., aged 46, was suffering from the effects of a debauch, nausea, extreme weakness, marked nervousness and insomnia.

Chloral seemed to increase the nervousness; under morphia administered hypodermatically he remained wakeful with eyes wide open. I ordered trional in 20 grain doses, to be repeated in one hour if not asleep. The dose was repeated at the end of the hour, the patient dropping into a quiet sleep, which lasted about four hours. On the following night 25 grains of the drug were administered, and the patient fell asleep in twenty minutes, obtaining seven or eight hours of refreshing sleep during the night.

I know that trional is used with much success in the Keely institutes throughout the country in those obstinate and tedious cases of morphia withdrawal. I mention this fact, not that I approve of Mr. Keely or his methods, but to show that he is not slow to appreciate the virtue in this drug as an hypnotic. I think that I can safely assert that if trional will produce a quiet and refreshing sleep in a habitue, whose portion of morphia is being withdrawn, it will act most satisfactorily and beautifully in a large majority of all other cases where an hypnotic is indicated.

I am convinced that in the above class of cases an hypnotic is subjected to a most searching trial, and for that reason I have referred them. I have used trional in fevers, malarial and typhoid, and in numerous other cases wherever an hypnotic was required, and have always found it to act most satisfactory. It is administered either in tablets, capsules, or powders. I prefer to dissolve the dose of powder in a cupful of milk, thereby assisting the flow of blood from the brain to the stomach. The by- and after-effects of trional, so far as my observations go, are nil. I have frequently administered as much as 30 grains at a dose without any bad effect, though as a rule 20 grains is amply sufficient.

I believe, as is claimed for trional, that it possesses a large number of advantages over other hypnotics, in that it exerts no deleterious effects upon the intellectual, respiratory, or circulatory functions, and is free from injurious effects upon the kidneys or digestive organs. Taking it all in all, I believe that trional should head the list of our hypnotics, for it is among the few that can be administered for a week at a time, and cause no habituation; and as I have said before, it is safe as well as effectual.—*Exchange.*

THE ASSOCIATED DIARRHEA OF PULMONARY TUBERCULOSIS.*

By DR. LOUIS F. HIGH, 560 Main Street, Danville, Va.

The frequency with which diarrhea occurs in the course of pulmonary tuberculosis is its own best reason for a more careful study of the causes of its production and the means for its relief.

The greatly diminished desire for food, a concomitant of advanced tuberculosis, resulting in the taking of quantities much less than the needs of the system require, followed by deficient assimilation due in part to the rapidity with which the alimentary substance is passed through the intestine, tends to rapid starvation.

---

* This paper was read at a regular meeting of the Danville Academy of Medicine, October 17, 1899.

The promptness with which a large number of cases of diarrhea yields to the plan of treatment presently to be considered carries an impression contrary to that generally held, that the essential cause in a large majority of cases is not a tubercular lesion along the intestinal tract.

Digestive deficiency is the chief cause of the diarrhea. The intimate relation of the nervous supply of the lungs and the stomach is well known. The gastric derangement induced by nervous influence when the lung is diseased is as constant as the cough induced by the irritation of indigestion.

Whatever may be the first change that occurs in the cellular components of the digestive organ, its result is functional impairment. The disturbance probably results from the transference of sympathetic vasomotor influence followed by a disordered state of the circulation in the ultimate gastric capillaries.

The unbalanced nervous mechanism responds abnormally to stimuli, and according to the extent and nature of the impairment of the special nerve cells will be the character of the gastric secretion. The physiological ratio of the digestive enzymes are altered and the inevitable result is faulty chymefaction.

The altered digestive fluid is further hindered by the increased quantity of mucus produced as the result of the passively congested stomach lining. The mucus, unlike the gastric juice, requires no stimulation for its secretion other than passive congestion; therefore, its production continues to some extent, even when the stomach is empty. The result is that the lining is not only thickly coated with mucus, but often contains, in dependant portions, a quantity of free mucus.

Upon the introduction of food into a stomach thus incapacitated, it is easy to understand that the bolus, already more or less coated by the buccal secretions and mucus of the esophagus, reaches its destination where the conditions opposing the contact of the aliment and the gastric juices are immensely increased.

The digestive fluids are secreted normally in response to the stimulating presence of food in contact with the nerve endings in the lining membrane.

The intervention of the layer of mucus on the walls of the stomach in a large measure prevents the stimulation of contact, therefore the secretion is delayed

The movements of the stomach are not so dependent on the contact of food as its presence, so the aliment is rolled in the dependant portion of the stomach while but slightly, if at all, touched by the digestive fluid.

Here the character of the food plays an important part in the ultimate outcome of these activities. If the alimentary substance is of such a nature that the cohesivenesss of its particles are increased by the water contained in the mucus, the result will be, as I have seen, round lumps rolled so hard as to resist all digestive agents.

The digestion, hindered first by gastric juice of irregular constitution, and, secondly, by its inability to become intimately mixed with the food, delays its passage into the intestine. The unusual length of time it has been retained in the stomach and the deficient antiseptic properties of the abnormal gastric juice have allowed and favored fermentation. When the food in this abnormal state enters the intestine, the enzymes of enteric digestion are inadequate to the task of rendering assimilable the illy prepared chyme.

The large quantities of the acids of fermentation, and the attendant chemcal changes, cannot be overcome, and so the process continues.

Intestinal irritation is provoked, resulting in diarrhea, an effort of nature to eliminate what has become a foreign substance.

The treatment resolves itself into the fulfilling of two requirements. Remove the mucus from the stomach first; give remedies that arrest or retard fermentation secondly.

I have met the first indication most successfully by washing out the stomach before the morning meal. If the patient should miss a meal, then lavage should be done before the next. The kind of solution is not so important as a thorough cleansing. Regardless of the quantity of the cleansing fluid necessary, all the mucus should be removed.

A dash of table-salt and sodium bicarbonate have a solvent effect on mucus. I sometimes use them, otherwise plain warm water is used.

In some cases the appetite that in a few minutes follows the washing is astonishing, and the digestion is correspondingly improved.

In most cases of advanced consumption, there is a great tendency to excessive mucus secretion. So constant is its presence that it may be regarded as a part of the clinical history of the disease.

Its formation is not confined to the stomach but in the mouth, trachea, esophagus, and probably in the intestines as well.

When the morning lavage fails to control the bowels, it is usually due to this tendency to excessive mucus secretion, and that enough collects in the stomach after breakfast, between the other meal periods, with the altered composition of the gastric juice, to keep up the fermentation.

Supplementary to hyper-mucus secretion should be mentioned the digestive enfeeblement induced by fever. During the active period of tubercular disintegration, when there is absorption, the diarrhea is sometimes very formidable and unyielding.

The treatment consists of absolute and enforced rest in bed, cool or tepid sponging, aseptic diet and remedies that allay and prevent fermentation in the stomach and bowels.

For the latter purpose there are a number of remedies that are very satisfactory. Among the remedies of the antiferment class the sulpho-carbolates are entitled to first place. The calcium salt, of them all, seems superior. It has appeared to do all that an antiseptic can be expected to do in the bowels with little or no disturbance, and can be used for several weeks without the slightest ill results.

Next in order of general effectiveness is guaiacol carbonate. Its tendency to derange digestion when given for any considerable time has proven a barrier to its more general use. I supplement its action by giving it with charcoal, which causes it to be better borne by the stomach for longer periods.

Opiates and astringents have small place in the treatment of this disorder, which is easily understood when we remember that it is the contents and not the bowels that are at fault.—*Exchange.*

PITHY, PUNGENT AND POINTED PARAGRAPHS,

REPRINTED FOR THE PERUSAL OF PHYSICIANS WHOSE PARTICULAR PENCHANT IS PERTINENT PROSE.

JAPANESE PATENT MEDICINES.—Japan has now a patent medicine law. The seller of a patent medicine is required to send in a detailed account of the use, dose, and contents of each patent medicine he sells, for which he pays 20 yen and an additional 2 yen yearly for each single one. The medicines may not contain any poisons. The permission may be withdrawn if the maker should alter the composition, or if it is proved that the contents are injurious to health. Altering the composition is punished with confiscation and 20 to 50 yen fine, forging the permission 50 to 100 yen, and secretly adding poisons means a fine of 100 to 500 yen. The informer gets half the fine.

THE INFLUENCE OF LIME UPON MALARIA.—Grillet *(Bulletin de l'Académie de médicine,* 1899, No. 26; *Annali di farmacologia e chimica,* September and October, 1899), in a communication recently presented to the Academy of Medicine of Paris, arrived at the following conclusions: 1. Those districts whose soil is very rich in lime are almost free from malaria. 2. Rivers which flow in a lime channel are free from it throughout their course. 3. It is possible to attain a relative immunity in malarial localities by manuring soil with a large quantity of lime. Dr. Laveran has been charged by the academy with the verification of these conclusions.

STERILIZATION OF MILK BY CARBON DIOXIDE.—The fact is well known that on heating milk nearly to the boiling point it takes on a characteristic and disagreeable taste, which is decidedly objectionable. According to a German patent (D. R. P., 105, 351) taken out by Niels Bendixen, of Copenhagen, this may be obviated by preventing any access of air to the milk while it is being heated. He accomplishes this by saturating the milk with carbon dioxide, then placing it in an air-tight kettle and heating under pressure to 120° C., and finally, when the milk has been cooled, driving off the carbon dioxide by passing sterilized air up through the milk. It is stated that milk treated in this manner is not changed either in color or taste and retains its capacity for separating off its cream. The process does not cause the formation of any "skin" upon the surface of the milk treated. While the precise nature of the part played by the carbon dioxide is not very clear, it appears to do something more than merely to exclude the oxygen.

HYSTERICAL APHONIA LASTING FOR ELEVEN YEARS.—Lennox Browne (*Jour. Lar., Rhin. and Otol.*, June, 1898). After a severe mental shock the patient, a woman, became suddenly mute, and continued so for three or four years. She then commenced to whisper. After three or four years more a deep, rough voice was developed by vibration of the ventricular bands, as seen by the laryngoscope. Different methods of treatment were tried without avail. Finally after exposure to intense excitement, the voice suddenly returned and remained normal ever afterwards.—J. Price Brown, Periscope in *Canadian Practitioner and Review*.

HOW A STUDENT WAS INSPIRED.—I shall never forget the night that a number of us under Prof. Babcock's direction inhaled benzine, which he caused to evaporate by sending air bubbles through it. Prof. Babcock had been interested in Dr. Oliver Wendell Holmes' experiments on himself with ether to see if he could gain inspiration to write poetry while under its influence. Dr. Holmes had found that he could not. Prof. Babcock had been experimenting on the same lines alone, and at one time nearly lost his life. He employed various anæsthetics. Well, this time we worked on benzine, and all of us but one laughed. This one began to dance around the room like a wild man, hitting anything he came up against, nearly knocking Prof. Babcock clean off his feet by a blow on the neck; then he grabbed a carboy of nitric acid and began to waltz around the room with it. We began to get frightened, and, throwing open a window, we stuck his head out in the cold winter air. He speedily came to, whereupon we all rushed out of the building before the place blew up, for the air was saturated with benzine fumes.—Wm. L. Bartlet.

NEW GERMAN PATENT MEDICINE LAW.—The following is an abstract of the law now before the German Federal Council for sanction, regulating the sale of patent and secret medicines. These are not (1) substances and preparations contained in and sold under the names given in the German Pharmacopœia; (2) substances recognized by medical science and practice as effecting cures; (3) all substances stated to be disinfectants, perfumes, food and condiments, and all strengthening preparations. The public advertising of secret medicines is prohibited; the bottles or receptacles containing the substance and covers must distinctly show the name of the article, and that of the maker, with his address, as well as that of the firm which sells it and the price. It is prohibited to put on the bottles (or to wrap them in papers setting forth) recommendations, certificates, or any mention of cases in which the medicine effects a cure, or has a preventive effect. Any secret medicine which the apotheker is doubtful about being safe to sell may only be given on a doctor's prescription, and in such case the bottle must bear the words, "may only be given on a prescription." Secret medicines which are injurious to health, or by means of which swindling is evident, are not allowed. Those considered as such will be named by the respective governments of each German State.

Glass Brick Walls for Operating and Work Rooms.—In building an operating room facing the east and close to the street, F. Kuhn *(Muench. Med. Woch.*, July 11 and 25, 1899) employed the Falconnier glass bricks, which are small cubes or diamonds of glass filled with air, and fitted and mortared together like ordinary bricks. He found that no windows were required, as the light penetrated sufficintly, although it is absolutely impossible to see in or through them, even with a light inside at night. A skylight above supplies the direct light, which is reflected and multiplied by the glass walls, without glare. They also modify the temperature of the room remarkably, modifying both heat and cold, and also deadening the noises without. Still another advantage is that these walls do not frost over in winter, and that they look clean, both out and inside, and can easily be kept aseptic inside, while they are very ornamental.

Dr. A. Bloch, the French anthropologist, attacks the theory that thick lips are a denotement of sensuality, while thin and delicate lips denote spirituality, firmness and elevated character. In a recent paper the scientist claims that the shape, size and color of the lips are purely race characteristics, and that in the hybrid peoples of Europe and America, where there has been such a general intermingling of races, a child may well inherit from not very remote ancestors lip forms that completely belie the actual character of the child, as indicated by the lip theory. Dr. Bloch's investigations satisfy him that really thick lips in the white races are always anomalies or freaks of nature.

The Spotted Fever of Idaho.—E. E. Maxey, in the *Medical Sentinel* for October, 1899, describes a peculiar fever found in the more or less elevated regions of Idaho. The disease is of no great severity and almost invariably terminates in recovery, hence the pathogenic anatomy has not been studied. It is characterized by a fever of moderate intensity, which is followed or accompanied by an eruption of red spots which begin first upon the wrists and ankles, where they are usually most numerous, and then extend over the body. This peculiar eruption is what gives the disorder the name of spotted fever. In the course of the disease there is more or less muscular stiffness, and occasionally numbness of joints is noted, which persists for some week after the fever has subsided. The author attributes the disease to the high altitudes and the drinking of snow water. As soon as the patients are brought down to a lower level, kept warm and properly nursed, they rapidly recover.

Simulated Appendicitis.—In the *Boston Medical and Surgical Journal* of December 14, 1899, J. G. Mumford describes the case of a young girl of 12 years who was sent to the Massachusetts General Hospital with a diagnosis of appendicitis. The child was vigorous and well developed, and was sent in on the third day of her illness. It began with acute pain in the umbilical region, which lasted six hours, when the patient began to vomit. The matter vomited was not analyzed. The patient obtained relief from pain for a few hours. On the second day the pain gradually became more severe. It was situated at first in the right inguinal region, but later extended to the right chest and back. Prior to admission to the hospital it is said that there was a high fever; twelve hours before admission castor oil had been given, which was followed by a number of watery stools. When first seen the general condition seemed to be good; the temperature was 103°, pulse 112, and respiration 28. The abdomen was distended and tender. McBurney's point of tenderness was easily distinguished, and localized the severest pain. Rectal examination was negative. An incision was made over the point of greatest pain and revealed a distended but normal cæcum, with a long, normal, rectrocæcal appendix vermiformis. Careful exploration of the abdomen revealed nothing. Within the cæcum, which was opened, a compact mass of orange pulp was found, which was removed, under the impression that it might be a growth. The blood-count made after the operation showed 30,200 whites, which within two days fell to 10,500. While no appendicitis was found, nor indeed any serious condition, upon operation, the symptoms apparently pointed to a perforated appendix and a spreading peritonitis.

WOULD SURGERY SUFFER IF IODOFORM WAS ABOLISHED?—E. C. Brush, in the *Journal of the American Medical Association* of December 16, 1899, sets out to answer the above question. He says the use of iodoform is on the wane, and he desires to further restrict its use. Accordingly, a large number of letters were sent to various surgical clinics asking certain questions relative to the value of iodoform and the frequency of its use. The first of these was, "What germicidal powder do you prefer?" Of the eighty-four replying, twenty-seven used iodoform, twenty-four used no powder of any kind, twelve used boric acid, and eight used aristol. The remaining thirteen used acetanilid, nosophen, iodol, etc. To the question, "Have you seen any bad effects from using iodoform?" seventy-three reported that they had seen bad effects, and eleven had not. Four of the eleven had seen no bad effects because they had not used the drug. Thirty-seven thought that the drug could be abolished without any detriment to surgery, and forty-seven believed that the detriment would be in a general way; twelve limited the loss to the treatment of surgical tuberculosis, and eight considered the loss to be only when it is used in connection with the manufacture of surgical dressings in specific cases.

PARALYSIS AGATINS.—The drugs which are in use for paralysis agitans, and from which some benefit in dissipating symptoms and fulfilling indications may be expected, are hyoscyamus and duboiscine, Indian hemp, opium, hæma, togenous agents such as arsenic and iron, and occasionally gelsenium and veratrum viride. Of these, the most important by far are the first mentioned. Given hypodermatically, which is the preferable way when possible, or by the mouth, they promptly mitigate the severity of the tremor, and have a pronounced tendency to relax muscular rigidity. They are both powerful toxic agents, and must, therefore, be given with care.—*New York Medical Journal*, July 8, 1899.

METHYLENE BLUE IN INSANITY.—The action of methylene blue in various psychoses is reported upon by P. Bodoni, of Genoa, in the *Klinisch-therapeutische Wochenschrift,* 1899, No. 21, May. He has found that intramuscular injections of from 0.8 to 0.1 gm. (gr. i. to iss.) produced markedly quieting effects in many forms of psychical excitement. He gives the clinical histories of cases of mania of various types, melancholia, dementia, paranoia, and hystero-epilepsy Most of the cases were influenced by it, and he claims that it should take an important place, ranging with the more usually employed hypnotics, chloral, amylene, hydrate, sulphonal, bromoform, and others.—*N. Y. Med. Record,* Aug. 19, 1898.

HEART DISEASE FROM AN OBSTETRICAL POINT OF VIEW.—Wright (*Canadian Practitioner and Review*, December, 1899) summarizes his paper as follows: (1) A woman having a heart lesion, which is compensated, should not be prevented from marrying. (2) Abortion should not be induced, unless very serious symptoms are present. (3) Premature labor should seldom or never be induced. (4) Mitral lesion is the most serious heart lesion during pregnancy and labor; aortic stenosis next, aortic incompetency next; mitral insufficiency is the least serious. (5) Treatment during pregnancy consists in the administration of the following, according to indications: Strychnine, digitalis (or strophanthus), cathartics, nitrite of amyl, nitroglycerine. Diet should be regulated. (6) During labor keep up the action of digitalis, especially during the first stage. Give strychnine and stimulants, if required, and chloroform. As soon as the first stage is completed deliver with the forceps. Watch the patient during the third stage and for some days after.

THE NATURE AND PRINCIPLES OF PSYCHOLOGY.—It is for alienists especially that Boris Sidis, in the *American Journal of Insanity* for July, 1899, discusses this subject, but its more careful study on the part of the general practitioner would often stand the thoughtful man in good stead. There is reason for congratulation that "medical men are no longer afraid of everything mental, and that psychology and medical science are no longer so far apart as for centuries they were." Subconscious phenomena, though long rejected, are not new and merit careful scientific investigation. Physically induced disturbances which are as often psychically cured should no longer serve only as the natural food of quackery. The psychiatrist has been outstripped; the neurologist, who has been too prone to cling to worn-out psychological doctrines, inclined in his pride to ridicule the psychologist. Studies of aphasia on the psychic side have been greatly neglected.

Now it is certainly plain to the medical man who has a good scientific training—and happily the majority of them do have one—that the imagination used as an explanation of the whole field of functional psychosis, the phenomena of hypnosis, the manifestations of the subconscious, and also the methods of psycho-therapeutics based on these phenomena, is simply a term that indicates an abyss of ignorance.

Psychology, and especially that part of it that deals with abnormal mental life, has proved to be practically useful, and philosophy is certainly not dangerous. Philosophy is after all only clear thinking, and is there any reason why medical men should not be clear themselves?

NERVE CELLS IN THE CEREBRAL CORTEX OF MAN.—The most recent estimate of the number of cortical nerve cells places it at 9,200,000,000, an estimate about eight times as large as that published by Meynert in 1872.

CORTEX STIMULATION.—Dr. H. E. Hering made experiments on dogs and monkeys by dividing the pyramidal tracts, etc., and which demonstrated (*Wien. klim. Woch.*, Aug. 17, 1899) that the nerves which produce contractions in muscles also relax them. He was unable to find any inibiting tracts inhibiting centers. He was unable to find any specific routes for transmission of clonic contraction. All the corticofugal nerve-tract capable of producing movements can also produce the cortical clonic contractions, but all are not equally excitable, the pyramidal tracts transmit the impulses to clonic contraction relatively much more readily than the others. He found that in the monkey the pyramidal tract plays a more important part than in dogs in isolated movements of the contra-lateral extremities in men still more than in monkeys. The dog, on the other hand, possesses a contra-lateral tract transmitting impulses for isolated movements which functionates. Associated with the homolateral tract in the monkey has a much more detailed function and is more readily excited than in the dog.

INSANITY IN THE JURY-BOX is made the subject of very pertinent editorial comment by the *Philadelphia Medical Journal* of November 18, referring to the alleged insanity of one of the jurymen in the recent Ingham-Newitt trial in that city. A member of the jury in that trial became violently insane eight days after the rendering of the verdict and was taken to an asylum. One of the asylum physicians says that the man when received was very insane, that he was the subject of delusions and auditory hallucinations, and that during the last ten years he had been admitted to the asylum five or six times with similar attacks, and that his periods of maniacal excitement lasted from three to six months. So far as we know, the *Journal* remarks, the case is unique in the annals of medical jurisprudence. The case is one evidently of folie circulaire or recurrent insanity, and the insane juror was probably at the time he was chosen and throughout the trial in the prodromal stage of an exacerbation and not, therefore, perfectly sane while serving on the jury. Psychological science at all events would doubt his perfect sanity, and some one in the cause should have legal benefit of this scientific doubt.

ERGOT IN CHRONIC MALARIA.—A. Jacobi (*St. Louis Medical Era*, October) concludes from an experience extending over forty years that there are many cases of apparently intractable chronic malaria that will get well with ergot. Enlargement of the spleen is also often reduced by the same drug. Slight occasional fever may persist, but without accompanying chills. For such cases the combination of ergot and quinine or ergot and arsenic may be advisable. Complicating local pain requires additional treatment with ice, cold douches or heat. Iodide of potassium or iron is demanded in chronic hyperplasia. Ergot, like quinine, by suddenly contracting the spleen and forcing large quantities of plasmodial blood into the circulation, may bring on an attack of ague at first.

ATAVISM IN MEDICINE.—If one had the time, the ability and the inclination it would not be difficult to write a considerable volume upon this fascinating theme. Reversions of type, physical, mental and moral, are so frequently encountered in medical practice that they must be taken into practical account in diagnosis and treatment. Many interesting questions—for instance, the former function of the appendix vermiformis—still await solution. The atavistic theory of the origin of tumors has able supporters. The dreadful manifestations of sexual perversion have been graphically portrayed by Krafft-Ebing. The much-married Mrs. Eddy's propaganda of "Christian Science," when observed closely, is perceived to be only a veiled modification of the ancient phallic worship. One of the principal creeds of her cult, so different in this respect from the Christ or the Jehovah of the Scriptures, is copulation without procreation. Indeed, as we look more deeply into these curious atavistic phenomena, we are inclined to believe that do-nothing hypocrisy and marital onanism are "Mother" Eddy's strong cards.

REPORT OF A SEVERE X-RAY INJURY.— P. Cassidy, Norwich, Conn., reports an extensive injury as the result of exposure to the X-ray. The exposure had been for forty-five minutes at a distance of five inches from the tube, which was of medium vacuum, of a static machine, the plates of which revolved 212 times a minute, and had been made for the purpose of obtaining a skiagraph of the hip joint. The result was a lesion, oval in form and five inches in the longer diameter. The color was dark gray, with here and there red dots, with neither discharge nor odor, and the skin at the edges apparently healthy. The points of interest in the case were the following: 1. The patient during the time of exposure suffered no injury nor pain. 2. Eight days elapsed before the appearance of any injury, and then only a slight dermatitis appeared. 3. The rapidity of the changes in the tissue involved a truly mummified condition, in which the lesion appeared dead, yet had sufficient vitality to be indestructible. 4. To the touch the induration was hard and unyielding and not at all sensitive, but at certain points it would bleed on friction. 5. There were severe paroxysms of pain upon the application of poultices or wet dressing, showing the induration to be highly absorbent. 6. There were marked constitutional symptoms and rapid wasting without much rise of temperature. After six months, during which numerous methods of treatment were tried without avail, all the diseased tissue was excised and the wound dressed with a bichloride dressing. Subsequently 290 skin grafts were placed in position by Riverdin's method, and the patient made a good recovery, with, however, some permanent lameness.

GAILLARD'S MEDICAL JOURNAL.
A MONTHLY JOURNAL OF MEDICINE AND SURGERY
Scientia et Veritas Sine Timore.

PUBLISHED BY THE NEW YORK MEDICAL PUBLISHING CO.,
106 William Street, NEW YORK.

MUCH ADO ABOUT NOTHING.

WE are free to say that we fail to see why the medical profession should be alarmed at the indisputed spread of "Christian Scientists" throughout this country. Ever since time began man has been a faithful patron of the fakir. Nothing is more contagious than enthusiam and the greatest of all enthusiasts is the fakir.

The savage when "out of sorts" will readily pay opera prices to the enthusiastic and befeathered possessor of a necklace of amber beads or a mixture of aromatics to frighten away the "evil spirit." So why should not Mrs. Eddy find a ready market for her copyrighted books and prayers among the many "pinheads" that inhabit this country of ours?

The prosperity of bone setters and magic men of medicine is simply due to the fact that nature is a fine physician, but a great many people lack sufficient "horse sense" to appreciate the fact.

As we enlarge our fund of knowledge we become more impressed with the wonderful provisions of nature, and it becomes more apparent to the intelligent mind that the dictates of civilized fashion are constantly waging war against natural instincts.

When we compare modern civilized man with his savage ancestor, domesticated animals with their undomestic forefathers, the extent of our departures from nature's intended simplicities are surprisingly magnified.

Nature very wisely provided for the removal of every element that disturbs the healthy operation of the human machine and the renewal of exhausted fuel.

The skin, the bowels, and the kidneys when not interfered with will expel from the economy all waste metamorphose products. The sense of hunger apprises us of the need for more fuel-food, and even regulates the variety as well as quantity. The sense of thirst tells us that more liquid is necessary to preserve the proper fluids of the body in a state suitable for circulation so that nutrition may be distributed to the depleted organs and the waste products conveyed to the proper channels for final discharge from the system. Lassitude bids us rest in sleep in order that the brain and body may properly recuperate for the performance of the labors of the succeeding day.

Thus it is clear that when nature is not subjected to the assaults of artificiality, man will enjoy a healthy life to the end of time allotted to him, it being an accepted fact that nature allotted a certain period of longevity to all animal life.

The savage unless destroyed in battle lives a life comparatively free from ills until he has consumed the number of years voted to him by nature. Sickness is practically unknown to him, and in the rare instances that he does lose his usual vigor and is inclined to be depressed or "out of sorts," his treatment consists of his necklace, the application of a poultice of animal excrement or perhaps the burning of aromatics. Nature is his doctor, and he derives the full benefit of her reparative measures, but credits all to his poultice, incense or beads.

On the other hand, modern civilized man rarely lives to enjoy the full period allotted to him, and generally divides health and disease equally.

The undomesticated animal unless killed to supply food and clothing for man or held in captivity to afford amusement to visitors to our zoölogical gardens lives the prescribed length of time without disease. Any injury he may receive from an attack of his kindred associates being remedied by nature, but his undomesticated cousin like civilized man is diseased and short lived.

To what is this radical difference between the health of the savage and the civilized, the undomesticated and domesticated to be attributed? To the very fact that the savage and the undomesticated are governed by natural instincts and enjoy nature's simplicities while the civilized and undomesticated are controlled by artificial and unnatural customs. Their occupations and habits were not anticipated by nature, hence were not provided for.

The civilized do not live in a state of nature. Their living quarters are made to harmonize with artificial tastes without regard for their hygienic requirements. Sunlight is excluded to give place to gas and electricity. Fresh air is looked upon as an unnecessary thing, save within the confines of parks and driveways. Food is selected by the dyspeptic chef without regard for its nutritive value, but with preference to what has been cultivated in hot-houses in opposition to its natural habitat. Fagged and exhausted brains are urged to perform unjust feats by the use of intoxicants and tobacco, which gradually impair the senses nature provided to supervise the economy, regulate supply and demand, and to direct the disposal of waste material. Stomachs that should have rest and high temperature for the proper preparation of fuel for generating force are chilled with ices, irritated with black coffee and tannated wines, and hurried into stock exchanges or banquet halls where all is worry and excitement.

Yet, in spite of all this, nature labors to assert her rights and maintain a normal state of health. Disease by natural design still exhibits a tendency to recovery, but is seldom awarded credit, and until we educate the uneducated and inoculate them with the fact that nature is the best of all physicians, Mrs. Eddy and those of her ilk will continue to prosper.

When we come to understand that regardless of unhygienic habits and vocations nature will insist upon healing even when forced to contend with innumerable abuses born of ignorance and civilized fashion, the fakir and his miracles will die a natural death.—V. L.

GAILLARD'S MEDICAL JOURNAL.

VOL. LXXII. NEW YORK, APRIL, 1900. No. 4.

LATENT GONORRHOEA IN THE MALE AS A FACTOR IN DISEASES OF THE FEMALE ORGANS OF GENERATION.*

By LEWIS WHEAT, M.D., Richmond, Va.,

Professor of Diseases of the Genito-Urinary Organs and Syphilis in the University College of Medicine.

That gonorrhœa plays an important part in the diseases of the female organs of generation is now almost universally conceded. The extent to which it may remain latent in the male when apparently cured, and the frequency with which the female is infected under such circumstances is still, however, a matter of dispute. I believe it to be a source of frequent infection; and my object to-night in reading this paper is not so much to tell you something new as to refresh your memories and induce you to impress your patients with the necessity for more careful treatment of the disease.

There is no malady that has been more grossly exaggerated on the one hand and underestimated on the other than gonorrhœa. The vast majority of the cases are, and remain, especially when properly treated, a simple local disease, readily cured in both male and female; while a few tax to the utmost our skill and patience in their treatment, and through systemic infection, often in spite of our best efforts, become a horrible disease, causing intense suffering and frequently ending in irremediable deformity or death. There is, too, an intermediate class, in whom the disease seems to lie ever dormant. It is, apparently, cured readily enough, but as readily breaks out again. I suppose that every one of you has some old stand-by, who is sure to turn up once in six months with a case of clap. It is this class in whom the disease seems to be latent, giving no evidence of its existence for months, or as long as the patient conducts himself properly. It is certain to break out, however, upon any debauch in venery or dissipation. There is another class, very much rarer: Those whose religious character is at stake and who have transgressed but once, and who through shame and mortification, secretly treat themselves, or allow their disease to wear itself out; these are most dangerous from our present point of view. This class marry with the germs still lurking in the crypts and follicles of the urethral mucous membrane, and the recesses of the prostate and vesicula seminales, their long presence having established a toleration. These are almost certain to infect their wives.

---

*Read before the Richmond Academy of Medicine and Surgery, Feb. 27, 1890.

In 1887, I was sent for to see a young woman recently married, who had returned prematurely from what was to have been an extensive bridal tour, in consequence of a slight indisposition. Her trouble was apparently not very serious, but sufficient to render further travel irksome rather than a source of pleasure. At the time of her marriage, she was in perfect health and had never been seriously sick in her life. When I saw her, about six weeks after her marriage, she complained of no well-defined trouble. She had menstruated at her usual time, but had noticed nothing very unusual except that her menstrual flow was a little more profuse and accompanied by some pain and a slight discharge other than menstrual. It was not enough, however, to attract attention, and she had only sent for me at the solicitation of her husband, more on account of a sense of fatigue when she got out of bed in the morning, accompanied by slight nausea and headache, loss of appetite, and a feeling of lassitude and indifference than anything else. Her husband was a Y. M. C. A. man, prominent in his church, and had borne an unblemished character as a model young man from his youth up. It never entered my head to even suspect that he had ever had the clap. I told the patient that she was bilious, and suffering from indigestion, and probably pregnant; gave her a prescription and left to call again in a day or two. When I next saw her, she said that she was a little better, but not well, and I gave her another prescription for indigestion, to earn my fee, and put her on a diet, still thinking that she was probably pregnant, which would account for some of her symptoms. When I next saw her she was menstruating and suffering even more pain than at her former period. The flow, except being a little more profuse, was still apparently perfectly natural and free from any unnatural discharge. There was considerable suprapubic tenderness, and her sexual relations caused violent pain, lasting for some time after the completion of the act, and leaving her very much exhausted. This condition of affairs continued for some time without improvement, and I now attributed her trouble to a mild pelvic cellulitis, caused by too frequent and too violent sexual relations. At her request her old physician saw her with me and concurred in my diagnosis. We treated her with hot applications to the abdomen, copious vaginal irrigations of very hot water night and morning, and repeated small blisters over the ovarian region. Under this treatment she slowly improved and was able to be up and about. But she now suffered occasionally with horrible pelvic pain, lasting a week or ten days, during which time it was necessary to keep her constantly under the influence of morphia and atropia. After a discharge of a tablespoonful of a mucilaginous fluid into the vagina, she would be comparatively free from pain, sometimes for several weeks at a time. This state of affairs continued with some improvement for nearly ten years, the intervals between her attacks of pain becoming longer and the pain shorter and less severe. Four years ago she became pregnant, and in time was delivered of a fine boy. ..

So dense was my ignorance and stupidity, I never suspected the cause of this woman's trouble until the meeting of the Southern Surgical and Gynecological Society in this city in November, 1891, four years after her marriage. During the discussion of Dr. Brown's paper on "Systemic Infection from Gonorrhœal Poisoning," my eyes were suddenly opened to the truth. Her husband acknowledged that he had fallen from grace and contracted gonorrhœa, which he had treated himself with injections. After lasting a long time the discharge stopped, and he believed himself well. You must remember that at that time none of us knew much about gonorrhœa in women. And how many of you, unprompted, will suspect the existence of gonorrhœa in a bride of six weeks whose husband is regarded as immaculate? My observations have led me to believe that infection from such a source rarely gives rise to more marked symptoms than those in the case just related; and these are often unaccompanied at any stage by pus or adhesions of any moment.

I assisted Dr. W. H. Parker some time ago in removing the tubes and ovaries in a similar case, in which these organs showed every sign of disease except the presence of pus and adhesions.

One reason for writing this article is to call attention to the fact that gonorrhœa in the female is rarely discovered until irretrievable damage has been done; and to suggest that if we accept the teachings of Noeggerath, Tait, Price, and other eminent gynecologists, as we must do at least in part as confirmed by our own experience, it is our duty to impress upon our patients the serious consequences that may follow an attack of gonorrhœa, and the necessity for early and thorough treatment, and also, when they marry, the necessity, if they wish to escape the serious consequences that so often follow gonorrhœa in women, for its early recognition and prompt treatment if their wives are infected. This is the more important as the disease in women rarely presents the clinical features we would expect, and is seldom recognized as venereal in its origin. How many cases of gonorrhœa in women have any of us been called upon to treat as such? I can only recall three, outside of children who were infected by their nurses. Lydston, of Chicago, in his valuable work just issued, says, "If the more advanced views be correct, the correlations of gonorrhœa and gleet in the male are too frequently regarded as simple and non-venereal in the female. It is a striking clinical fact that gonorrhœal inflammation in the female rarely presents conditions physically analogous to those observed in the male. Vaginitis of venereal origin is exceptional, and urethritis, the only real analogue, is excessively rare in women, and, moreover, does not always occur when virulent vaginitis exists." While the disease, as we have seen, may be as mild, or even less troublesome, in women than in men, the loss of her sexual organs and untold agony can often only be prevented by the early recognition of the disease and its prompt treatment. If recognized sufficiently early I believe that gonorrhœa is more certainly and easily cured in women than in men. "The researches of modern operative gynecologists are developing most astonishing facts. The more carefully we study pelvic diseases in women the narrower their etiologic field becomes, the more frequently they are found to be dependent upon gonorrhœa. Thus when freed from pathologic and anatomic errors pelvic inflammations are found to be dependent, in the majority of cases, if not all, upon tubal disease, and tubal disease is unquestionably almost always due to gonorrhœa and its congeners or derivatives." (Lydston.)

Noeggerath, applying the dictum of Ricord that in 1,000 men 800 have had gonorrhœa, says, "I do not believe that I exaggerate when I say that gonorrhœa in 90 per cent. of cases remains uncured. Of every 100 women who have married men formerly affected by gonorrhœa hardly ten remain well, the others are afflicted by some of the ailments that I have attempted to describe." I know from my own experience that this is an exaggeration. The young men of Paris, New York and Chicago may be so unfortunate, but it is not the case in Virginia. I know that I have treated many patients who have married and are the fathers of many children without infecting their wives. And I believe that when treatment is instituted sufficiently early and properly, and thoroughly carried out, clap is as completely eradicated as any other disease. It is the pernicious custom of treating the disease as a slight ailment of no consequence, and the fact that almost every drug store in the country is a clap shop, that produces the evil. I recognize the fact, however, that while the gynecologist is liable to error on his side, I am liable to err on my side. He sees the infected wives, and I see the men only, and in many instances lose sight of them after marriage. Yet, when I did a general practice I treated many cases of gonorrhœa and afterwards delivered their wives, and I am sure that a majority of them have never had any trouble that could by any possibility be attributed to gonorrhœa. While the case I have detailed is one of many, all are by no means so fortunate. The literature of the last ten years teems with the reports of cases in which infection has been followed by metritis, endometritis, salpingitis, pyosalpinx, ovaritis, cystitis, urethritis, pyelitis, peritonitis, acute pyaemia and death. I shall only occupy your time with one more case in my own experience, which shows how rapidly general systemic infection may follow the disease when acquired from a man who thought that he was cured, and in whose disease the gonococci played but a very small part. Some time ago a young man whom I had apparently cured was married, and, it is only fair to say, against my advice. When he came to me he was suffering from one of the most violent attacks of gonorrhœal urethritis that I have ever seen. He had contracted the disease from a very handsome woman, with whom he had spent the night about one week before seeing me. Two days before he had noticed a slight discharge, which had rapidly increased and which was then pouring from a swollen and pouting meatus. The whole penis was swollen and excessively tender; the veins stood out like cords, and the lymphatics could be readily seen, enlarged, painful and excessively tender along the dorsum of the penis. Micturition was already so painful that an attempt to pass water caused great beads of perspiration to stand out upon his forehead; and that night and many nights and days thereafter it had to be drawn with a catheter, which caused such horrible agony that I was compelled to use chloroform. I put him on what was then my routine prescription—santal oil and bicarbonate of soda, with sulphate of soda to keep his bowels open. Erections were almost constant and a source of agony. Sleep was impossible except under large doses of morphia and atropia. A hip bath as hot as could be borne gave him some relief, and was frequently repeated. I also directed him to keep his penis immersed in a solution of chloral hydrate (5 grains to the ounce of water), and when not so immersed, or in the hip bath, surrounded by absorbent cotton kept wet with the solution. In this way he passed his days longing for night, and his nights longing for day. His temperature ran from 100° to 101° F. Three days later it suddenly reached 104°—an almost certain indication of abscess in the prostate. Such it proved, rupturing a few days later while passing the catheter. Microscopic examination of the discharge showed gonococci in abundance, and huge colonies of streptococci. After much suffering he recovered, with, of course, a much damaged urethra. He left Richmond shortly after to accept an important position in another city. About eighteen months later he wrote to me that he was to be married in a few weeks. I replied, warning him that he could only do so with great risk of infecting his wife, and received the usual reply—that it was too late. Two weeks after marriage his wife was taken violently ill with so-called rheumatism. One joint after another became inflamed, followed by suppuration and anchylosis. More than six months passed in horrible suffering, when she was able to be moved, and was sent to the Hot Springs. Since then I have heard little from either of them except that she continues in wretched health, and that her doctors advise an operation, the nature of which I do not know.

In the past twelve months I have seen three cases of suppurating appendicitis in young men suffering with acute gonorrhœa. I very foolishly failed to have the pus examined, and so cannot say whether it was due to gonorrhœa or not. From my own experience in systemic infection from gonorrhœa, and the many reported cases, I believe it to be extremely probable. In such cases as the last related by me no treatment can prevent their being dangerous as foci of infection for years, and, I believe, as long as they live. But an experience rather larger than usual leads me to believe that if physicians and patients would realize the serious nature of the disease and institute proper treatment at once the disease could be eradicated and prevented from becoming latent. When, however, it is allowed to run on with improper treatment, or none at all, for weeks, or even months, Dr. Price is justified in saying that it never gets well, and remains a source of infection as long as the sufferer lives.

THE DIAGNOSIS OF CHRONIC GASTRITIS.

By J. H. SALISBURY, M.D.,
Professor of Internal Medicine, Chicago Clinical School, Assistant Professor of Medicine and Chemistry, Rush Medical College.

The diagnosis of this disease includes not only the establishment of its existence, but the discrimination of its different forms. It is comparatively easy, from the account given by a patient, to arrive at the conclusion that he is suffering from some disease of the stomach, but the true nature and the proper treatment of the disease can only be determined by a careful investigation by the physician, including a thorough physical examination and a careful chemical and microscopic examination of the stomach contents. That this investigation should not lead to fallacious results should be made complete and thorough. The physician should realize and should impress upon the patient the fact that the examination that he is about to undertake is one which may vitally influence the future of the patient, and a wrong conclusion, made upon imperfect data, hastily or carelessly obtained may lead to wrong prognosis and to great injury from improper treatment. It is important to remember that correct conclusions can seldom be drawn from a single examination. Private patients are apt to have a horror of the stomach tube, and therefore are loth to submit to this method of investigation. But the results to be reached are often of no less importance than those which are held to justify exploratory laparotomy, and the physician ought to be as well able to secure the coöperation of his patient in the one case as the surgeon in the other.

In the diagnosis of this disease we are to take into consideration the clinical history, the present symptoms, the physical signs and the evidence derived from the inspection, chemical analysis and microscopic examination of the stomach contents, obtained after the administration of one or more test meals.

In obtaining the clinical history, due attention should be paid to the elicitation of certain etiologic factors. These are the previous occurrence of attacks of subacute gastritis, the occupations and habits that tend to the production of disease of the stomach, the occurrence or presence of disease of the mouth, teeth, nose or pharynx, which may favor the production of disease in the gastrointestinal tract, and the occurrence of disease of other organs, which may predispose to gastritis. Prominent among these are infections such as typhoid, diseases of the heart, liver and kidneys. It is notable that many of these patients are affected with constipation, which may bring about disease of the stomach by favoring the production of toxins, which are absorbed into the blood. The clinical history ought to be obtained in writing and in a systematic manner, so that a perusal of it will leave a clear impression of the previous condition of the patient.

The physical examination of the chest should not be neglected. Disease of the stomach may be an accompaniment or consequent upon tuberculosis of the lungs, and in this case our treatment as well as prognosis may be materially modified. We should also know of the presence of disease of the heart, not only because this complication may modify treatment, but because it may render the use of the stomach tube inadvisable. The urine also should be carefully examined, although it does not throw any great light on the existence or character of uncomplicated gastritis. In the examination of the abdomen we should aim to determine as well as possible the form and position of the stomach, and the presence of tumors or other complicating disease of the abdominal organs. In gastritis the form and position of the stomach are not especially altered, so that the result of this examination can only make evident the presence or absence of complications.

The methods of examination of the abdomen which are most useful are percussion and palpation; auscultation plays a minor part in the diagnosis of this affection. The operation of dilating the stomach with gas and the transillumination of the stomach are liable to be fallacious.

The introduction of the stomach tube is a procedure which is necessary to an accurate diagnosis of gastritis. Is this operation ever dangerous? While it must be admitted that there are conditions which absolutely contraindicate the use of the tube, the importance of these conditions should not be unduly magnified, as sometimes happens, either from the fears of the patient or from the hesitancy of the physician. We may mention as contraindications the existence of painful disease of the pharynx or esophagus, valvular disease of the heart and ulcer of the stomach, in which the diagnosis can be confidently established by other means. In cases of recent hemorrhage from the stomach the tube should not be introduced. When circumstances make it desirable to introduce the tube in case of ulcer, or any other case in which a straining of the stomach should be avoided, the pharynx should be sprayed or brushed with a solution of cocain or eucain before proceeding to the introduction of the tube, and the contents of the stomach should be obtained by suction, and not by expression.

In order to obtain reliable results from the examination of the stomach contents, it is necessary that they be obtained at a definite period after the administration of a test meal containing a definite amount as well as quality of food. The reason for this will be evident if we recall the fact that hydrochloric acid, when secreted, combines at first with the albuminoid constituents of the food, and does not appear as free hydrochloric acid until all the albuminoids have been saturated with the acid. If the food contains an indefinite amount of proteids this saturation will occur at an indefinite time, and the stomach contents taken an hour after the meal may give no reaction for free hydrochloric acid, even in normal cases.

The test meal should be one which has been tested as to the action of the stomach upon it, so that the amount of acid formed and the amount of digestion performed upon it and the length of its stay in a normal stomach are known. When the test meal has been given the contents of the stomach should be removed at a definite time, or we may obtain anomalous results. If we delay too long after a test breakfast, the food may have disappeared from the stomach, and the results of the examination be entirely negative. Three test meals are in common use—the test breakfast of Ewald, the test meal of Germain-See and the test dinner of Riegel. The test breakfast of Ewald is the one most commonly used, and serves the purpose of testing the gastric secretion for free hydrochloric acid and digestive power, as well as revealing the condition of the mucous membrane as to the presence of mucus, bacteria, etc. This is the meal which we ordinarily use in the clinic, because of its simplicity and the short time required after the meal is given before the stomach contents can be removed. This meal consists (according to Von Valzah and Nisbet) of 70 Gm. (about two ounces) of bread and about one-third liter (about two cups) of tea without milk or sugar. (Ewald states a roll weighing about 35 Gm.). The bread should be well chewed and thoroughly mixed with saliva and then washed down with the tea. The meal should be eaten slowly, and afterward the patient should be placed in circumstances favorable to digestion. At the end of an hour the contents should be obtained as follows: The stomach tube, which has been previously sterilized by boiling in water, should be wet with warm sterilized water, introduced into the mouth and passed to the back of the pharynx and the patient requested to swallow it. The patient may grasp it with his lips, but must not bite it with his teeth. The introduction of the tube may be aided by gentle pressure of the hand of the physician.

The average length of tube necessary to reach the stomach is marked on the tube, and when this point is reached the efforts to introduce the tube are suspended and the outer end of the tube is lowered into a clean basin, and the patient is told to make efforts to strain, as if about to vomit. These efforts will usually cause the contents of the stomach to flow through the tube, unmixed with saliva. In case the stomach contents cannot be obtained in this way, resort may be had to suction. For this purpose the stomach tube is provided with a bulb, which is compressed, and the tube outside the bulb tightly compressed, so that no air can enter; the bulb is then allowed to expand, drawing the contents of the stomach into it by suction; the tube is now compressed between the bulb and the stomach and the contents of the bulb expressed by compressing it. This maneuver is repeated until the required amount of contents is obtained. In some cases the contents fail to flow, because the tube has either not reached below the level of the liquid, or has curled up, so that its end has been pushed above the level of the liquid in the stomach, so that none enters it when the stomach is compressed. In such case the contents can be obtained by moving the tube in or out, as the circumstances may require. The contents may be too thick to flow through the tube. This will occur very seldom with the Ewald test breakfast. The stomach may be empty, in which case, of course, no contents can be obtained. To introduce water to facilitate the removal of the stomach contents is inadmissible, because the analysis of the contents would thereby be rendered inconclusive. Especially is this the case if ordinary drinking water is employed, as it is often alkaline enough to neutralize the free acid of the gastric juice. Having obtained the contents, we proceed to the examination. Inspection will tell us whether digestion has proceeded normally or has been greatly impeded. We may also in this manner discover blood, or mucus, or in some cases pieces of the mucous membrane, which have been detached by the eye of the tube.

The mucus found in the stomach contents may be from two sources —mucus that has been swallowed and mucus that has been secreted by the stomach itself; the former usually floats in masses on the surface of the stomach contents, the latter forms a viscid layer that clings to the bottom of the dish. The presence of an excess of mucus is an evidence of gastritis.

The chemical examination of the gastric juice aims to determine the extent to which the stomach is performing its natural functions, and whether abnormal changes are going on in it. The principal digestive agents are hydrochloric acid and pepsin. The hydrochloric acid of the gastric juice is partly free and partly combined with the albuminous constituents of the food. When first secreted it combines with proteids, and gives no reaction with the reagents for free hydrochloric acid. At the end of about half-an-hour after a test breakfast free acid normally makes its appearance in the stomach; the amount of free acid increases from this time until, at the end of an hour, the height of digestion is reached, and then it begins to decline. It is important to determine both the presence and the quantity of free hydrochloric acid.

The presence of a free acid is indicated by Congo paper. Congo paper is naturally red, but is turned blue by acids. This reaction is marked with hydrochloric acid, and much feebler with organic acids, such as lactic, or acetic. A decided reaction with Congo paper enables us to affirm with a fair degree of certainty that free hydrochloric acid is present. A much better reagent for free hydrochloric acid is Günzberg's or the phloroglucin-vanillin test. The reagent is made as follows:

Phloroglucin	2 Gm.
Vanillin	1 Gm.
Absolute alcohol	30 Gm. M.

To test: A drop of the reagent is mixed with a drop of the gastric contents, and the mixture evaporated at a very gentle heat upon a porcelain dish. The evaporation is best conducted on a water bath. If free hydrochloric acid is present the mixture will turn red at the edges as it evaporates. This reagent is very delicate and indicates free hydrochloric acid when present to the extent of one part in 20,000. Another reagent which we use in place of Günzberg's, on account of its keeping better, is known as Boas'. This is made as follows:

Resorcin, resublimed..................	3 Gm.
Cane sugar	5 Gm.
Alcohol (95 per cent.)..................	100 c.c.

This is used in the same way as Günzberg's, except that from three to five drops are used with an equal quantity of the contents. The color produced is the same as when Günzberg's is used.

Another reagent which is much used is dimethyl-amidoazo benzene. This substance is a yellow powder soluble in alcohol, and is used in a one-fourth per cent. alcoholic solution. The solution is yellow, but turns red upon the presence of a trace of free hydrochloric acid. The reaction occurs with one part in 20,000. No heat is needed. Unfortunately, the reagent is affected by lactic acid in a manner similar to hydrochloric. If lactic acid be removed by shaking with ether the reagent becomes a very good one for HCl., and it is especially serviceable in determining the quantity of free hydrochloric acid.

The determination of the quantity of free hydrochloric acid is a very important matter, as upon it depends to a great extent whether we shall class the case as hyperesthenic, and administer sedative treatment, or assign it to the class of asthenic affections and give a stimulating treatment. For this determination two methods may be used—first, dilution; second, neutralization. If the stomach contents will give the reaction with Günzberg's reagent or dimethyl amido-azo-benzene after being diluted ten times then the original must have contained at least 1 part in 2,000. By determining the point at which the dilution ceases to give the reaction we can calculate the strength of the gastric contents in hydrochloric acid.

The method of neutralization gives more exact results and can be carried out without much trouble by the practitioner. The apparatus needed consists of a burette, a 10 c.c. pipette and solution of decinormal sodium or potassium hydroxid. Decinormal potassium hydroxid contains 5.6 Gm. of pure potassium hydroxid in a liter of distilled water. Such a solution should be made and standardized by a chemist, as it is not possible to weigh potassium hydroxid accurately. An indicator is made according to the following formula:

Dimethyl-amido-azo-benzene	0.25 Gm.
Phenol-phthalein	2 Gm.
Alcohol	100 c.c. M.

The decinormal potassium hydroxid is put into the burette and 10 c.c. of the gastric contents are measured into a small beaker by means of the 10 c.c. pipette. To this is added one or two drops of the indicator. If free hydrochloric acid is present the mixture turns a bright red. The alkaline solution is now dropped in from the burette until the red color is replaced by yellow, and the amount of alkali used is noted. The free HCl is now neutralized. A piece of Congo paper is placed in the liquid; if free acids are still present the paper turns blue; the alkali is added until the paper regains its original red color. The point marks the neutralization of the free acid. The amount of alkali used is again noted and the addition of alkali continued until the liquid turns a deep red from the action of the alkali on the phenol-phthalein. This points marks the neutralization of all acids and acid salts and gives the total acidity of the gastric juice. For convenience the numbers thus obtained are multiplied by ten, so as to give the number of cubic centimeters of decinormal alkali required for 100 c.c. of the stomach contents. Normally, Ewald's test breakfast gives free HCl, 10 to 15; total acid, 50 to 65. In case lactic acid is present in the stomach contents, as indicated by Uffelman's test, it must be removed by shaking with ether before determining the amount of free HCl.

To determine the amount of combined HCl it is necessary to subtract from the total acidity the sum of the free acids and acid salts. This is determined by titrating 10 c.c. of the stomach contents with decinormal alkali, using alizarin as an indicator. This dye responds to acids and acid salts, but is insensitive to combined hydrochloric acid. As soon as the free acid and the acid salts are neutralized it turns violet. If the number of cubic centimeters used in this titration is substracted from the total acidity obtained as described above, the figure for combined hydrochloric acid, that is, the acid in combination with the proteid constituents of the food, is obtained.

In cases where free HCl is lacking, a solution of decinormal hydrochloric acid is added to the stomach contents until a reaction for free HCl is obtained. This gives the figure for hydrochloric acid deficiency, that is to say, the amount of acid necessary to saturate the albuminous constituents of the food so that the hydrochloric acid will be free.

Instead of using the decinormal alkali solution, the practitioner who has no burette may adopt the following method:

Triturate carefully 0.53 Gm. of pure dry sodium carbonate with sugar of milk sufficient to make the mixture weigh 100 Gm. Weigh out 1.6 Gm. and divide into 16 powders, as accurately as possible. Each of these powders is equivalent to 1-10 c.c. of decinormal alkali solution. The powders are added one by one to ten cubic centimeters of the stomach contents, to which the indicator has been added, until the yellow color appears. In this case the liquid must be gently warmed before the total acidity can be accurately determined.

To determine the amount of pepsin is difficult, and most observers have contented themselves with determining relatively the amount of peptonizing power. The progress of digestion can be estimated fairly well by the intensity of the biuret reaction for peptones. This is made as follows: 10 c.c. of the gastric contents are rendered strongly alkaline with solution of potassium hydroxid and a drop or two of a dilute solution of copper sulphate added. The solution turns a rose red if peptone or albumose is present. From the intensity of this color one may judge of the amount of peptone present, and hence of the amount of digestion that has taken place in the stomach.

The peptonizing power is best determined by the method of Hammerschlag. A mixture containing 1 per cent. of albumin and 0.4 per cent. of HCl is made; 10 c.c. of this mixture is mixed with 5 c.c. of stomach contents and placed in a tube; 10 c.c. of this mixture are also mixed with 5 c.c. of distilled water and placed in another tube. The two tubes thus prepared are placed in the thermostat for one hour. At the end of this time they are removed and two Esbach's albumimeter tubes are filled to the mark U with the two mixtures, respectively, of albumin and gastric contents, and albumin and water. Esbach's reagent (picric acid 10 Gm., citric acid 20 Gm., water 1,000 c.c.) is added to each tube to the mark R, the tubes inverted two or three times to mix their contents well, and allowed to stand for twenty-four hours. At the end of this time the amount of albumin is estimated in both tubes. By subtracting the amount of albumin found in the tube containing the stomach contents from the amount in the tube in which no digestion has occurred we find the amount of albumin digested in one hour by 10 c.c. of the stomach contents. This is expressed in percentage of the total albumin. The normal digestive power after a test breakfast should be about 90 per cent. Instead of the Esbach tube we may use a device of Dr. J. E. Skinner, which consists of a card on which is printed a space, which, when cut out, leaves an opening into which a test tube of a definite caliber will fit. This notch is for the purpose of exactly measuring the caliber of the tube. Other marks upon the card show the height in the tube to which the urine, or, in this case, gastric contents, should reach, and the amount of reagent to be used. Ordinary test tubes can thus be used instead of the costly special tube of Esbach.

The determination of the milk curdling power of the stomach contents is sometimes of great service. The method of testing this is as follows: Five c.c. of the gastric contents are exactly neutralized by decinormal alkali, and added to an equal quantity of sweet neutral milk and placed in the thermostat for from 10 to 20 minutes. At the end of this time the milk ought to be coagulated if the normal amount of milk-curdling ferment is present. To test for labzymogen, 5 c.c. of the stomach contents are made slightly alkaline, so that the ready formed ferment is destroyed. Five c.c. of milk are added and then 2 c.c. of a one per cent. solution of calcium chlorid, which causes the conversion of labzymogen into labferment. The mixture is placed in the thermostat, when coagulation takes place if labzymogen is present. The quantity of these ferments is determined by diluting the gastric contents and determining at what degree of dilution coagulation fails to take place. Normally, a dilution of 1 to 40 ought to give positive results for labferment, and 1 to 160 for labzymogen.

In these investigations, if a thermostat is not at hand, a large dish-pan may be partly filled with water, which can easily be kept at a constant temperature of 40° C., and the tubes may be placed in this. Before concluding, in any case, that the stomach has lost its power to secrete pepsin, the experiment of giving the patient a quantity of dilute HCl a short time before the stomach contents are extracted should be tried. This will sometimes cause the secretion of pepsin in cases where it has seemed to be absent.

The substances which have been considered are normal constituents of the stomach contents. Other substances produced by fermentation may furnish evidence of disease and indicate certain therapeutic measures. The chief of these are lactic, acetic and butyric acid. Lactic acid is chiefly formed when hydrochloric acid is deficient, so that fermentation occurs, which would otherwise be prevented by the antiseptic action of the mineral acid. Lactic acid is especially apt to be present in cases of cancer. Acetic acid occurs commonly in cases in which there is excess of hydrochloric acid. Butyric acid is seldom found except where the food is retained in the stomach an undue length of time.

To test for lactic acid the stomach contents should be extracted with ether, the ether evaporated, and the residue dissolved in a little water and tested by Uffelman's test, as follows:

To 10 c.c. of a 1 per cent. solution of carbolic acid a few drops of solution of ferric chlorid are added, so as to give an amethyst blue color. To this the ethereal extract from 5 c.c. of gastric contents, diluted to its original volume with distilled water, is added. If lactic acid is present the blue color is replaced by a distinct yellow.

The presence of volatile acids (acetic and butyric) can be determined by heating the stomach contents in a test tube and holding a piece of blue litmus paper in the escaping steam. If the paper is turned red, volatile acids are present. Acetic acid can usually be recognized by the sense of smell.

Microscopic examination may reveal the presence of numerous micro-organisms, none of which can be said to be characteristic of gastritis.

Several other procedures may be used to determine the capacity, movements and absorptive power of the stomach. The time occupied by stomach digestion may be learned by washing out the stomach five hours after a full meal. At this time the normal stomach should be nearly or entirely empty.

A single examination of the gastric contents may not be conclusive. The diminished amount of hydrochloric acid may be due to a functional nervous depression; excess of hydrochloric acid or hyperchlorhydria is often due to nervous irritation; it cannot in such cases be taken as evidence of gastritis. Most authors make three varieties of gastritis—hypersthenic, asthenic and atrophic. A case which presents evidence of long continued irritation of the stomach, with pain after meals, the pain increasing with the progress of digestion, and relieved by albuminous food, by liquids, and by the administration of alkalies, and in which the free hydrochloric acid, after a test meal, is above normal, peptone abundant, and a large amount of mucus is found, is referred to the class of hypersthenic gastritis.

Asthenic gastritis presents the symptoms of dyspepsia, occasional nausea and vomiting, loss of capriciousness of appetite, flatulence, eructations, and in which the stomach contents after a test breakfast show absence or diminution of free HCl and little peptone, much mucus, and in some cases the presence of lactic acid.

Atrophic gastritis shows utter lack of digestion, total absence of hydrochloric acid, both free and combined, and of pepsin.

URTICARIA: ITS VARIETIES AND TREATMENT.

By DAVID WALSH, M.D. (Edin.).
Physician Western Skin Hospital, London, W., England.

In many ways urticaria is one of the most interesting diseases that fall within the province of the dermatologist. Its essential process is that in response to an irritant, applied either from without or within, there is a rapid development on the surface of the body of wheals which itch and burn, and after a time disappear just as suddenly as they came upon the scene. In addition to that direct irritant origin, however, we must add a smaller group of cases in which the urticaria is undoubtedly of central nervous origin, as when the condition is developed under the influence of strong mental emotion. It is also to be remembered that certain blood-borne irritants may affect the nerve centers rather than the peripheral nerve terminations. Lastly, there is the theory of nervous reflex origin, a vague explanation that is being constantly narrowed in its application as our knowledge of concomitant facts becomes more accurate. From whatever source it may arise the wheal is the outward and visible sign of a wave, a vasomotor disturbance, and appears to demand as an invariable antecedent some unstable innervation, either central or peripheral, of the cutaneous vascular apparatus. No other hypothesis than that of predisposition would explain the fact that not a few persons are immune to the urticarial irritation of nettle stings and to the bites of fleas, bedbugs, and, under some circumstances, even of mosquitoes. Although of late years a good deal of light has been thrown upon the subject, it cannot be said that scientific medicine has yet solved the problems presented by the signs that fill in the everyday clinical picture of urticaria in such bold and unmistakable outline.

The wheals of urticaria last for a time that may vary from a quarter or half-an-hour to several hours, or even in some instances to two or three days, when they disappear and leave no desquamation. They are raised swellings, oval or rounded in form, and are the seat of burning, tingling and itching sensations, often of an almost intolerable kind. Their average size is from that of a threepenny piece to a sixpence or a shilling; they may be small as hempseeds or large as the eggs of a hen or a turkey, or even bigger. When they follow scratching by the finger nails they have a characteristic linear form. At times the wheals may be red instead of white, and many become hemorrhagic, and be accompanied by copious bleeding from mucous membranes, or develop vesicles or bullæ. Their distribution is general and non-symmetrical. As indicated by the name, they resemble exactly the swellings caused in most persons by the sting of a nettle. The sharp hair of the plant introduces an irritant fluid into the tissues of the skin with which it comes in contact. There is an instantaneous vasomotor response shown by a red flush due to dilated capillaries; this congested stage is followed by one of rapid edema or serous effusion, whereby the vessels are emptied and the swollen area becomes anemic. The result is a rounded, firm, white swelling, surrounded by a faint flush. The first sensation of pain on contact with the sting is replaced by the sensory disturbances mentioned, which last until the wheal suddenly dies away. These sensory symptoms may be due to mechanical pressure of the swollen tissues upon nerve endings, or to the direct toxic action thereon of the nettle virus. Some persons are not affected by nettle stings; that is to say, they get no resulting inflammatory edema, just as others escape annoyance from flea bites. It seems not unlikely, therefore, that a special predisposition to peripheral vasomotor disturbance must be present in the individual susceptible to nettle stings, and *mutatis mutandis* to nettle rash. The matter is further complicated, however, by the fact that a certain amount of exposure to mosquito bites confers immunity to the majority of individuals. So far as one has been able to learn, no such immunity has ever been acquired by persons susceptible to nettle stings, and to the bites of fleas and of bedbugs. The question as to how immunity follows exposure to mosquito bites is worthy of careful scientific inquiry by some observer who lives in a mosquito-ridden district. Almost any kind of chemical, thermal or mechanical irritation may give rise to urticaria. By drawing the finger nail sharply over an urticarious skin a wheal may in many cases be at once excited. The invariable antecedent conditions to urticaria are an irritable vasomotor system, the presence of an exciting cause in the shape of an irritant, external or internal, or of a central or reflex nervous impulse.

Urticaria may be acute or chronic; that is to say, it may run a short febrile course, when its cause is usually clear; or it may recur in crops for months or years, in which event its origin is for the most part obscure.

Etiology.—Urticaria is a symptomatic vasomotor reaction in response either to an irritant locally applied or to central or reflex nervous action. The irritant may affect the skin either from without or within.

External Irritants are Legion.—The bites of many insects, as the flea, bedbug or mosquito, contact with certain hairy caterpillars, or with various plants, as the primula obconica, the stinging nettle, and, in a case published some years ago by the present writer, the angelica plant, which is candied and used extensively by confectioners. The cuttlefish, jellyfish, and other marine animals, may act in the same way. Cold is not an uncommon cause, as the use of the cold bath, or contact with snow. Heat is sometimes an excitant, and in one case under the writer's care a gentleman could not go into a warm greenhouse without at once setting up an urticarious eruption. Washing in oatmeal water has been known to induce nettle-rash, which is produced by many drugs. Indeed, to draw up a complete list of the biological, mechanical, thermal and chemical irritants that have given rise to contact-wheals would be to fill several pages of this journal.

Internal irritants form another large and varied group. Of these the simplest are certain drugs, such as quinine, copaiba, antipyrin and morphia, in which the action is presumably a direct one on the skin. According to the writer's theory of excretory irritation, the drug itself, as in the case of iodine or copaiba, acts as a blood-borne irritant to that part of the skin whereby it is being excreted, just as it does on other excretory organs, for example, the kidney. This explanation applies with equal readiness to other sources of internal irritation, such as particular foods, or the products of various gastro-intestinal or uterine disorders. The analogy between a drug and a toxic product of tainted meat in the production of an identical nettle-like rash is obvious. In both cases the individual must be predisposed, for many persons take copaiba, and suffer from ptomaine poisoning without developing any eruption. One man cannot touch, say, a nut or a strawberry, while another cannot eat cheese without setting up an urticaria. The commonest articles of food at fault are crabs, lobsters, oysters, mussels, and other shellfish, mackerel, pork, mutton, sausages, oatmeal, mushrooms, cheese, nuts, bitter almonds, strawberries, and other fruits. In all cases it seems likely there is some special irritant capable of acting in one of two ways, either directly by contact with the tongue and other mucous membranes, or indirectly after absorption into the blood-stream, or in both ways. McCall Anderson has published a case in which oatmeal proved an invariable urticarial excitant whether applied externally in washing, or internally as a food. The direct irritation of mucous membranes has been alluded to. Thus, the tongue sometimes swells up to an alarming extent on contact with a nut or other article of food against which the affected individual has an urticarial predisposition. From the fact of bronchitis and gastro-intestinal irritation occurring together with nettle-rash it is probable that the mucous membranes generally are open to urticarial invasion. The conjunctiva may be also affected.

Mental excitement sometimes produces severe urticaria of different parts of the body.

To the peripheral and central nervous origin of urticaria most authorities add that of reflex action. Indeed, the urticaria of strong excitement may be described as a reflex of various external stimuli conveyed to the brain chiefly through the senses of sight and of hearing. While admitting the possibility or probability of a more extended field of reflex actions, it may, nevertheless, be pointed out that the instances commonly cited in proof of the reflex origin of urticaria may be quite as readily accounted for on the theory of a blood-borne irritant acting directly on the skin. Thus, uterine disease has often been quoted as a typical example of reflex urticarial irritation. In such a condition there is presumably, as a rule, plenty of toxic material capable of causing nettle-rash ready for absorption. The possibility of the entry of such material into the system is shown by the rashes that have sometimes followed vaginal or uterine douches of boracic acid, or by mercurial poisoning after similar applications of corrosive sublimate. The connection between the tapping of hydatid cysts and other surgical procedures may be readily explained by the theory of septic absorption, which also applies to the nettle-rash occasionally associated with gall stones. Lastly, the concurrence of urticaria with intestinal worms, often quoted as an unquestionable example of reflex irritation, may be quite as reasonably attributed to the absorption with the circulation of toxic products from the deranged intestinal tract. It may be, of course, that the blood-borne toxin produces the urticaria by its action on the nervous rather than on the cutaneous system, but on the other hand it is to be noted that ptomaine rashes are often scarlatina form, which looks as if their irritant action were rather directly local upon the glands of the skin. On the whole, it would be perhaps safer to say of the so-called reflex urticarias that the exact method of causation in most cases requires further investigation.

Varieties.—Urticaria acute runs a short course. The characteristic rash is attended by gastro-intestinal irritation, headache, furred tongue and a feeling of prostration. The temperature usually runs up to 101° F. or 103° F., when the condition is known as *urticaria febrilis.* The rash may not appear for a day or two after the onset of symptoms. The cause is usually evident in the shape of some drug or article of food. It is worthy of note that although, as a rule, the rash quickly subsides, yet at times it persists long after the removal of the original cause, as though the skin had taken on "a bad habit." A similar observation applies to the disturbed gastro-intestinal functions.

Urticaria factitia is that form in which the cutaneous surface responds readily to local irritation, so that, for instance, names scratched on the skin with a finger nail quickly stand out in raised wheals. This interesting condition is known as "dermographia," and may be compared to some extent with the *Vaches cérèbrales* (the *Vache méningitique* of Trousseau), red lines caused by drawing the nail over the skin of children suffering from tubercular meningitis.

Urticaria chronica.—In this form successive acute crops appear at longer or shorter intervals over a period of time varying from months to many years. Its cause is often extremely difficult to discover, but there is the tendency, already mentioned, of an acute attack to become chronic. In these chronic cases a fairly constant association with rheumatism, both family and personal, and with bad teeth, may be noted. There is no special condition brought under the notice of the dermatologist that demands more patient investigation than certain cases of obstinate urticaria. Fortunately, persistence on the part of the physician and patient is tolerably sure to be rewarded in the long run by the cure of a troublesome malady.

Urticaria gigantea (of Milton) is characterized by the large size of the wheals. Hardy described this variety under the name of tuberous or edematous urticaria. It sometimes attacks the region of the eyelids, which become so puffed up as to quite close the eyes. The appearance then may be aptly compared with the swollen eyes sometimes due to mosquito bites. Hemorrhage may take place with these edematous wheals.

Acute circumscribed edema (Quincke) is another name applied to urticaria of the excessively edematous type, and is really the same as the giant form. Other names are: Fugitive cutaneous edema, ephemeral congestive cutaneous tumors, angioneurotic edema, acute subcutaneous edema, and so on. The essential feature is the appearance of evanescent and circumscribed firm edematous tumors, which may vary from an inch or two in diameter to huge swellings involving the whole of a limb.

Urticaria perstans is a rare condition, in which the wheals remain for a long and sometimes indefinite period.

Urticaria papulosa is an important variety affecting children, also known as *lichen urticatus* (Bateman) and *prurigo infantilis.* The chief trouble is the itching. On examination there is a rash about the body, especially on the back, and less on the limbs, consisting of inflammatory, pale papules, with excoriated and scabbed tops. The small reddish wheals may not be seen at the time of examination, but a history of their occurrence can generally be got from the friends of the patient. The skin in chronic cases is studded with papules, and has not inaptly been described as feeling somewhat like a nutmeg grater. The disease is suggestive of scabies, but it has not the characteristic burrows and the distribution of the parasitic condition. It is an extremely chronic condition and obstinate to treatment, lasting for years and growing worse in summer. It is usually found to be curable in Great Britain and France, so that it appears to be a condition distinct from *Hebra's prurigo*, which begins in early life as an urticaria, but is said to be incurable and to entail a life of misery. Less severe cases of a similar type have been reported from time to time in recent years in England, where they have been regarded as lichen urticarus that has persisted into adult life.

Treatment.—The first step in approaching the treatment of this troublesome symptomatic complaint is, find out the cause, a task which may be simple enough, or on the other hand, may prove extremely difficult. Acute cases may be due to the ingestion of some special article of food, when an emetic and a brisk saline purge may be all that is required to effect a cure. Inquiry may show that the rash has been caused by taking a certain drug, which must, of course, be at once stopped. In acute and transitory cases a little soothing external treatment may be needed for the skin, but now and then the acute local irritation continues and calls for systematic treatment. Disorders of digestion should be remedied, and it is worthy of note that the dyspeptic troubles of an acute urticaria may linger long after the original fleeting disorder. External sources of irritation may be self-evident and permit of ready removal. At times, however, they may be obscure, such as the contact of woolen underclothes, or even of linen clothing that had been washed with certain chemicals. The use of softer underclothing, such as silk, may meet the case. The cold bath is said to be answerable for the rash in some instances, just as washing the hands in cold water suffices to bring on an attack in certain predisposed individuals.

In chronic cases the course is by no means so clear. In dealing with them one is reminded of the somewhat time-worn axiom that the best physician is, after all, the best dermatologist. For their alleviation it will be necessary to inquire into every system of the body. The state of the teeth, the digestion, both gastric and intestinal, and the action of the bowels, require attention. The uterine and menstrual functions, and the state of the nervous system must be investigated. There is no doubt that the symptom of urticaria is caused frequently by auto-inoculation, as, for instance, by the absorption of toxic material from the bowel or from a septic utero-vaginal tract. Therefore, the appropriate treatment of nettle-rash may be that of chronic constipation, or of curetting the uterus. The gouty and rheumatic diatheses, especially the latter, may be active predisposing causes. The teeth should always be attended to at the outset of treatment.

Internal Treatment embraces aperients, as aloes and iron pill, or Hunyadi János water and other salines. The gouty and rheumatic states require appropriate remedies. Antipyrin and antifebrin in ten-grain doses, are said by Crocker sometimes to cut short or even to cure an attack. Bromide of potassium, tincture of belladonna, salol, salicylate of soda and quinine may be tried in obstinate cases. Ichthyol, two and a half grains in pill thrice daily, has been much lauded in some quarters. The subcutaneous injection of atropine in doses of one one-hundredth grain, cautiously increased, is worth a trial. Diet is of importance, and each patient should find out for himself if any particular article of food sets up urticaria. In children it is important to avoid sweets, and to give a plain, wholesome diet, consisting largely of milk, while the stomach and bowels may be regulated with small doses of pepsin and grey powder. In adults, sweets, malt liquors and heavy wines are to be avoided, and regular exercise and plain living to be enjoined. By care and patience it is possible in the long run to cure the most obstinate cases both in children and in adults.

Locally, warm alkaline baths are useful. Sponging with creolin (one drachm to eight ounces), lead lotion, carbolic acid (one drachm to eight ounces), sanitas fluid (one to three), liquor carbonis detergens (one drachm to eight ounces), vinegar and water, or eau de cologne, may give relief. The applications should be changed from time to time, as they appear to lose their efficacy with prolonged use. Generally speaking, antiseptic, astringent and evaporant lotions and baths are preferable to ointments. Patience in investigation, patience in treatment, patience everywhere, is the key to success in the treatment of urticaria.

SURGICAL ODDS AND ENDS.

By **WILLIAM ANDERSON PAYNE, M.D.,**
Pathological Interne, Kings County Hospital, Brooklyn, N. Y.

At St. Mary's Hospital, Hoboken, N. J., I met with the following cases that I hope will be of interest to the profession, not so much on account of their practical bearing as for the lesson they teach one to be prepared at all times for all things. The conditions here presented are rare, if I may be allowed to judge from the statistics at hand.

Case I.—Fracture of the mandible at both angles. This case I saw in consultation with Dr. Stack. The patient, eighteen years of age, was hit by a thrown brick on the side of the lower jaw while walking through an ill-lit park. Nothing presented to make him think of fracture, and he thought the jaw merely out of place, until on examination the next day we assured him of the true condition. He could make himself well understood, and in articulating moved the symphysis considerably. He could eat food that required no chewing, and complained of nothing save slight pain, greatly increased on moving or manipulating the maimed member, and deformity. On inspection there was much swelling at both angles of the jaw, not unlike a double parotitis, and had I not observed the deviation of the chin to the left I would surely have thought of that condition. The mouth was open and he could not close it. The manual examination showed free motion of the symphysis downward and upward, as well as from side to side, yet in this latter attempt I failed to bring the chin to the middle line. Grasping the molar teeth with two fingers, I found that I could move the ramus of one side with my other hand, and this procedure and result I demonstrated on the other side as well. The mucous membrane was untorn. So easily did I obtain the false points of motion and crepitus that from these signs alone I was warranted in making the diagnosis. The deformity and position left no room for doubt. With my thumbs in the mouth and fingers grasping the lower border of the bone, I reduced the fracture, and maintained the jaw in its proper place by a plaster splint, moulded snugly, and so broad as to embrace the angles thoroughly. The line of fracture on both sides was quite the same, extending from behind the last molar teeth to the angles.

A fracture at this point is not common, and when it occurs on both sides and with such manifest symmetry it becomes rare indeed. The mild type of symptoms should also be noted, and it would really appear as though a double fracture of this nature would be preferable to the usual single and compound fractures of the symphysis. These fractures, besides being simple, were unaccompanied by injury to the contents of the inferior dental canal. The attachment of the masseter muscle to the fragments of both sides must be given credit for the mildness of the subjective and objective symptoms, for it bound the pieces together and constituted a natural splint and at the same time lent its action to either fragment. After four weeks the patient was quite well and without deformity.

Case II.—Rupture of the internal lateral ligament of the knee, with gunstock deformity of the leg. This patient was a strong, robust man, aged thirty-one years. He fell from a scaffold twelve feet high, and landing on his outstretched feet was thrown forcibly to his right. He was unable to arise, and was brought to the hospital in the ambulance. On examination I found his leg occupying an angle of 135° with his thigh. With little force this angle could be made more acute, but all efforts to reduce the deformity failed. The inner hamstrings were quite taut, but none of them was ruptured. The inner portion of the capsular ligament had been torn across, and the ruptured ends of the internal lateral ligament could be felt in their retracted positions. In this rent I could thrust my finger tips between the intact head of the tibia and the inner condyle of the femur, and in this intervening space I could feel what I believed to be the dislocated internal semilunar fibro-cartilage. To its detached presence between these articular surfaces I attributed my failure to bend the leg inward to its normal position. It greatly hampered, furthermore, the movements of flexion and extension, and only through a very small arc and with great difficulty could I accomplish this movement.

By manipulation with the fingers of my right hand in the situation described, and by vigorously moving the malplaced leg with my right hand, I was suddenly conscious of a click, and the leg once more occupied its normal position. This click was produced by the slipping of the cartilage into its proper site. The inflammatory reaction was great, but after several days spent in combating it the whole limb was encased in plaster. At the end of six weeks this was removed, but so weak was the joint that a reapplication of plaster was deemed necessary. It, however, bade fair finally to regain its strength. At this point I lost sight of the case.

Case III.—Inward dislocation of the foot, without fracture. This man, aged thirty-three years, stepped on the end of a plank; the other end went up, and he was thrown forcibly on his left side. He managed to get a car and from the car walked unaided into the hospital. His right foot was dislocated inward. If it had been outward instead, one would, after inspection, have diagnosed it as a Pott's fracture with the accompanying deformity. The sole of the foot, however, was parallel to the floor. The foot was pushed inward, and the internal malleolus rested on the middle of the trochlear surface of the astragalus. This malleolus being intact, I was curious (and am yet) to know how the inner articular surface of the astragalus passed under it and to its inner side. Surely it could not have passed directly inward, for the projecting malleolus and the capsular ligament offered a formidable barrier, to say nothing of the adjacent prohibitory structures. To go around the malleolus would have been easier, and I am forced to conclude that this is what happened. Considering the articular surface of the astragalus as a segment of a wedge with its base forward, we must regard the route pursued by this in freeing itself of the malleoli on either side as a forward one. When it had passed sufficiently far anteriorly the inner malleolus slipped outward on its posterior surface, and from this situation the malleolus passed forward, by the flexing of the foot in walking. So we find the tip of this process resting firmly against the center of the trochlear surface, probably indenting it, and maintained in this position bv the strong upward pull of the adjacent ligaments and tendons. The external lateral ligament was ruptured; the internal one was not and could be felt as a taut band running from the malleolus almost horizontally inward to the displaced astragalus. On the outer side the malleolus had nearly penetrated the skin and was felt beneath it as a sharp projection. At one point I could pass my finger between the outer surface of the astragalus and the inner surface of the maleolus. With the patient under chloroform I succeeded by repeated efforts in forcibly replacing the foot. The patient remained five weeks in the hospital, and was left without deformity and with a leg of normal usefulness.

Case IV.—Fracture of the fourth metatarsal bone. How a force of any kind could act on one of the inner metatarsal bones alone is rather remarkable, unless it be from some pointed object. This case, however, presents further interest, in that the man with foot strongly extended had the anterior part of the sole and toes come in contact with the pavement. I shall not attempt to disclose the selective action of this particular pavement. There was swelling over the outer part of the foot. A tap on each of the toes elicited pain only when the fourth toe was struck. I could get fremitus and a false point of motion, and these combined with the signs above brought me to the diagnosis as recorded.

Case V.—Incised wound of the ischio-rectal fossa produced by breaking of a chamber vessel. These trips to Chinatown are not infrequent, and I do not mention it on account of its oddity, but rather to show the beautiful effects of saline infusions in the treatment of hemorrhage.

This heavy old woman produced by her great weight breaking of the night-glass beneath her, and incurred thereby a wound four inches long, extending deeply into the ischio-rectal space. When she reached the hospital it was quite evident that a severe hemorrhage had occurred. All the symptoms of hemorrhage were present, but the absence of the radial pulse alone sufficed to indicate that our patient was on the verge of death.

Besides the usual remedies we started the flow of saline solution into the buttocks and beneath the breast. Gradually the pulse increased in strength, and the patient before long was placed on a fair basis of life. By far the greater part of this improvement was directly traceable to the salt solution. I could feel the pulse come up as the fluid filled the vessels. Unfortunately the patient died of hypostatic pneumonia two weeks later. The danger of such accidents impresses upon one the fact that beneath the bed there often lurks the enemy of womankind.—*Medical Record.*

THE VALUE OF INORGANIC IRON IN ANAEMIA.

By G. MILTON LINTHICUM, A.B., M.D.,

Professor of Physiology and Rectal Diseases, Maryland Medical College; Visiting Physician to Maryland Hospital for Consumptives of Baltimore; Surgeon to National Temperance Hospital, Baltimore; Member of Medical and Chirurgical Faculty, and Clinical Society of Baltimore; Member of the American Medical Association.

It is needless to enter into the details of the various symptoms and conditions which are presented in cases of anæmia, for every one is perfectly familiar with a disease which is so prevalent and common in every walk of life; found almost as often in the palace as in the hovel.

I shall therefore not attempt to deal at all with the symptoms, nor with the pathology of anæmia, other than to show the prime importance of some form of iron in its treatment. The relation of cause and effect in anæmia is clearly shown by the microscope, for with a normal number of four to five million of red corpuscles and a normal amount of hæmoglobin there is no evidence of the anæmic signs; but, as we find a departure in the blood from this standard, in the line of a deficiency of these factors, so proportionately does the diseased condition, anæmia, present itself, passing on into chlorosis, with deficient hæmoglobin, and into pernicious anæmia, with the least possible number of red corpuscles to carry out life's functions. Thus it is evident that anæmia is a condition dependent upon the number of *normal* red corpuscles in the blood; and I think we can certainly conclude that the essential element in the red blood-corpuscles is the hæmoglobin, since ninety per cent. of the solid matter is this pigment, and of this compound 0.47 per cent. is iron—the only element present which has great affinity for combining with oxygen to form an oxide; so it seems more than a reasonable conclusion that iron is the *sine qua non* in the make-up of blood normally, and an essential in the treatment of the disease anæmia. Aside from these physiological truths, the immense amount of clinical evidence as to the value of iron in anæmia which has accumulated in the years of treatment in the practice of medicine is overwhelmingly in its favor. It was even used as a household remedy in the form of a tonic obtained by rusting (oxidizing) nails in water and using the supernatant fluid, which is certainly a great contrast to the elegant preparations of to-day—I am afraid, often more elegant than efficient.

The absorption of inorganic iron has been a much-discussed question, and recently an article by Dr. Porter repeated the views of Bunge that iron was not absorbed into the system, but merely combined with the hydrogen sulphide in the intestines and formed the insoluble sulphide of iron, thereby sheltering and leaving the vegetable irons of the foods for absorption into the system.

Woltering clearly demonstrated the fallacy of this argument by giving the sulphate of iron to rabbits, in which cases there were large accumulations of iron in the liver, and then by administering salts of manganese, which unite equally well with hydrogen sulphide, and would thereby shelter the vegetable irons; but in these there were no accumulations of iron in the liver, proving conclusively that the accumulated liver iron was obtained not from the vegetable but from the inorganic iron sulphate.

Gaule and Macallum separately demonstrated the absorption of inorganic iron into the system by chemical tests and the microscope, watching every stage, as it passed into the villi of the duodenum, into the liver and spleen, where it was accumulated.

"The lowered amount of hæmoglobin and the histological changes of the blood depend not upon the condition of the *food*, but simply upon want of iron, since with this one can not only avoid but also improve such conditions. Iron given in a form uncombined with organic material is taken up and assimilated by the animal organism." (Capolla.)

These investigations certainly prove beyond any question in my mind that inorganic iron is absorbed by the intestinal villi when administered as such, and is accumulated for the metabolism of the needs of the system.

From the numerous preparations of so-called organic irons, for which, by the statement of their organic nature a greater degree of assimilability is alleged, a word of comment is necessary. In the first place, they are not true organic compounds of iron and organic matter, but are mere mechanical mixtures, of which, Herschell says, "the worst preparations of iron are the peptonates, albuminates, and colloids, which are acted upon by the hydrochloric acid of the stomach, forming an insoluble precipitate of ferric carbonate; and the alleged fact that these preparations are better borne in disease is evidently due to being almost inert."

In regard to the value of manganese as a hæmatinic, there is a wide diversity of opinion. Personally I can see no sound basis for its use other than as an alternative in combination with the administration of iron; for not even a trace of it can be detected as a normal constituent of the blood; nor can any trace of it be discovered in any of the absorbing channels, or in the storehouses of the system, when it is administered.

I think it is an indisputable fact that iron in some form is the essential and the specific in the treatment and cure of anæmia; and it remains no longer a question in my mind as to the absorbability of inorganic iron, but to give it in the form which is most readily absorbable; and there are several requirements which, if fulfilled, certainly add materially to the value of the preparation and approach more nearly an ideal hæmatinic. Preferably the form of iron should be insoluble when administered, for by being so it is harmless to the teeth, a most important consideration in children, whose teeth are just forming and are so susceptible to the least injuries. The preparation should not nauseate nor disturb digestion; for at the very best in anæmias we have a most sensitive stomach, the vitality of which is at a low ebb, and if we destroy the aid of the digestive organs in our treatment we have done a far greater wrong than our tonic can overbalance, as the proper food nutrition is the first and most important consideration.

As anæmia is not infrequently a concomitant and a result of constipation, due to the self-infection, and blood destruction from the toxic agents locked up in the bowel, it is a self-evident fact that the preparation should not be astringent, but rather a laxative. Indeed, Sir Andrew Clark emphasized this point decidedly when he said that if limited to the choice of one drug in the treatment of chlorosis he would prefer a purgative.

Finally, it should be a preparation which can be absorbed with the least possible effort on the part of the tissues, for their vitality in anæmia is low.

When we read the various pamphlets and the different literature it appears that no difficulty would be experienced in finding hosts of preparations that promise to answer all these conditions.

A preparation which theoretically complied with essential requirements laid down above was brought to my attention some time since. I can not say I am heartily in favor of proprietary preparations, but my prejudice is very much removed if the owners give me the entire quantitative formula. This preparation is made from a German formula and has recently been introduced here under the trade name of "aromatin" (Dolle).

The formula is phosphated iron, which is insoluble in water as well as in hydrochloric acid of the stomach, suspended as the finest pulverized powder in a menstruum, with glycerin preservatives, slightly aromatized to render it agreeable to the taste, forming a milk-white liquid. The dissolving agent is a tablet containing sufficient sodium phosphate to dissolve the iron in a half-ounce dose of the fluid, together with tartaric acid and sodium bicarbonate, which effervesces when dropped into a wineglassful of water, a not unpleasant draught. The milklike liquid is taken, followed by the effervescing tablet solution, so that in the stomach the iron phosphate is gradually acted upon by the sodium phosphate, forming the soluble bibasic sodium and iron phosphate, which in its nascent state is more readily absorbed. Thus this preparation can not act upon the teeth in its insoluble state. It is non-astringent and neutral, thus not interfering with the gastric juices in the stomach nor the pancreatic juice in the duodenum, where iron absorption is most active. The carbon dioxide settles the stomach; the phosphate is a laxative and cholagogue, preventing constipation; indeed, this laxative effect is so decided, I found that great care must be taken in its use with tubercular cases with a tendency to diarrhœa. As a hæmatinic I tested its value in a series of six cases of anæmia treated for forty-seven days; three of these were poor patients surrounded by the worst hygienic conditions and with the usual coarse diet of the poor. The other three were all in good, comfortable homes, but were not amenable to regulation of diet. The preparation was palatable and nauseated none, nor did they feel any uncomfortable effects, as bloating and belching of wind from the stomach after taking.

There was a decided improvement in every case with an average of relative increase of twenty-eight and two-thirds per cent. red corpuscles and eight and a half per cent. hæmoglobin.

Case I.—S. H., aged twenty-two years, mother of two children. A seamstress doing work on heavy, coarse shirts—a most laborious task. Her surroundings were unhygienic, as she lived in a room in a tenement house.

She was very poor, consequently her food was scant and coarse; she rarely took any exercise. She was anæmic, pale, and weak, poor appetite, and had a stubborn case of stomatitis. The stomatitis was treated locally, and "aromatin" given for forty-seven days, at the end of which she reported feeling greatly improved and in a far better physical condition.

Microscopic report showed a relative increase: Red corpuscles, 26.5 per cent.; hæmoglobin, eight per cent.—bringing the blood practically up to the standard in corpuscles and hæmoglobin, with all surrounding conditions working directly antagonistic to success.

Microscopic Report.—Treatment begun October 19, 1899.

First examination, October 19th. Red corpuscles, 3,400,000; hæmoglobin, eighty-four per cent.

Second examination, October 30th. Red corpuscles, 3,400,000; hæmoglobin, eighty-four per cent.

Third examination, November 9th. Red corpuscles, 3,500,000; hæmoglobin, eighty-five per cent.

Fourth examination, November 18th. Red corpuscles, 4,000,000; hæmoglobin, eighty-six per cent.

Fifth examination, November 28th. Red corpuscles, 4,300,000; hæmoglobin, ninety-two per cent.

Increase absolute: Red corpuscles, 900,000; hæmoglobin, eight per cent.

Case II.—Mr. C. F. H., aged twenty-eight years; married; occupation, paper-hanger; indoor life, a typical case of anæmia, similar to those usually found in general practice. Gave usual symptoms of lassitude, loss of appetite, and malaise. Tendency to constipation. He was placed on "aromatin," and no other treatment, and felt perfectly well after the forty-eight days' treatment, with no digestive disturbances in any way during the treatment.

Miscroscopic report showed a relative gain of red corpuscles, twenty-eight and a half per cent.; hæmoglobin, fourteen per cent.

Microscopic Report.—Treatment begun October 19, 1899.

First examination, October 19, 1899. Red corpuscles, 3,500,000; hæmoglobin, eighty-four per cent.

Second examination, October 30th. Red corpuscles, 3,800,000; hæmoglobin, eighty-four per cent.

Third examination, November 9th. Red corpuscles, 3,800,000; hæmoglobin, ninety per cent.

Fourth examination, November 18th. Red corpuscles, 4,000,000; hæmoglobin, ninety-two per cent.

Fifth examination, November 28th. Red corpuscles, 4,500,000; hæmoglobin, ninety-eight per cent.

Increase absolute: Red corpuscles, 1,000,000; hæmoglobin, fourteen per cent.

Case III.—E. L., single; female, aged twenty-four; a demiblonde; occupation, chocolate dipper in a candy factory. Home, tenement house, with unfit sanitary arrangements; family poor.

History of chronic dyspepsia lasting for a number of months, which was treated at the dispensary of another college, by specialists, with lavage of stomach; no improvement resulted.

She was discouraged and came to the dispensary of the Maryland Medical College, where her history of pain, vomiting, and nausea after meals, with constipation, malaise, and weakness was given. Along with this, her pale, waxen appearance indicated a chlorotic condition. She was given "aromatin" exclusively, except a mixture of fluid extract of cascara and tincture of nux vomica with bismuth for a short time. At the end of the seven weeks' treatment her general appearance had improved, she had color, and her conjunctiva showed its normal appearance. She stated she was almost herself again, rarely ever vomited, and had no pain after eating; her constipation was improved, and she was working twelve hours a day. This girl had made no change in her manner of living, she had only her usual diet, and had to work in a factory with a number of other girls and rarely had an opportunity to get fresh air.

Microscopic report showed relative increase of red corpuscles, thirty-one and a quarter per cent.; hæmoglobin, ten per cent.

The former diagnosis and treatment for gastritis were certainly wrong, and the deep-seated trouble would have been recognized had a blood count been made.

Microscopic Report.—Treatment begun October 19, 1899.

First examination, October 19, 1899. Red corpuscles, 3,200,000; hæmoglobin, eighty-six per cent.

Second examination, October 30th. Red corpuscles, 3,650,000; hæmoglobin, eighty-eight per cent.

Third examination, November 9th. Red corpuscles, 3,900,000; hæmoglobin, eighty-eight per cent.

Fourth examination, November 18th. Red corpuscles, 3,900,000; hæmoglobin, ninety per cent.

Fifth examination, November 28th. Red corpuscles, 4,200,000; hæmoglobin, ninety-six per cent.

Increase absolute: Red corpuscles, 1,000,000; hæmoglobin, ten per cent.

CASE IV.—G. C., aged twenty-five years; medical student, tall, slender, blond; hours of confinement long, with extra amount of work imposed, owing to back work.

Anæmia, with lassitude, fatigue on exertion, inability to concentrate the mind in study. Anæmia due to over-work and lack of exercise.

Placed on "aromatin," under which he improved in every way.

Microscopic report showed relative gain: Red corpuscles, thirty-one and a half per cent.; hæmoglobin, eight per cent.

Microscopic Report.—Treatment begun October 30, 1899.

First examination, October 30, 1899. Red corpuscles, 3,200,000; hæmoglobin, eighty-four per cent.

Second examination, November 9th. Red corpuscles, 3,800,000; hæmoglobin, eighty-five per cent.

Third examination, November 18th. Red corpuscles, 4,000,000; hæmoglobin, ninety per cent.

Fourth examination, November 28th. Red corpuscles, 4,300,000; hæmoglobin, ninety-two per cent.

Increase absolute: Red corpuscles, 1,100,000; hæmoglobin, eight per cent.

CASE V.—R. L., aged fourteen, a schoolboy; suffering with anæmia secondary to malaria. Listless, inactive, disposition to lie around and sleep; no appetite; loss of flesh. His condition was overcome after the treatment of "aromatin." His weight was increasing, and he began to get back his animal spirits of activity. Appetite much improved.

Microscopic report showed relative increase: Red corpuscles, twenty-seven and a quarter per cent.; hæmoglobin, seven per cent.

Microscopic Report.—Treatment begun October 19, 1899.

First examination, October 19, 1899. Red corpuscles, 3,300,000; hæmoglobin, eighty-three per cent.

Second examination, October 30th. Red corpuscles, 3,500,000; hæmoglobin, eighty-five per cent.

Third examination, November 9th. Red corpuscles, 3,500,000; hæmoglobin, eighty-six per cent.

Fourth examination, November 18th. Red corpuscles, 3,800,000; hæmoglobin, eighty-four per cent.*

Fifth examination, November 28th.. Red corpuscles, 4,200,000; hæmoglobin, ninety per cent.

Increase absolute: Red corpuscles, 900,000; hæmoglobin, seven per cent.

CASE VI.—P. G. M., a little girl, aged thirteen years; blonde; small for her age, with slight spinal curvature. Home comfortable and good, but being an only child she is pampered and her mode of life not regulated; eats largely of sweetmeats, which it seemed impossible to stop. Her only symptoms were the general appearances of anæmia and a feeling of coldness in extremities. She would not take proper exercise, and would eat little or no meat. Her treatment was exclusively that of "aromatin," under which she improved greatly in appearance, and particularly in overcoming languor.

Microscopic report showed relative increase of red corpuscles, twenty-five per cent.; hæmoglobin, seven per cent.

Microscopic Report.—Treatment begun October 19, 1899.

First examination, October 19, 1899. Red corpuscles, 3,200,000; hæmoglobin, eighty-two per cent.

Second examination, October 30th. Red corpuscles, 3,500,000; hæmoglobin, eighty-three per cent.

Third examination, November 9th. Red corpuscles, 3,600,000; hæmoglobin, eighty-three per cent.

Fourth examination, November 18th. Red corpuscles, 3,800,000; hæmoglobin, eighty-eight per cent.

Fifth examination, November 28th. Red corpuscles, 4,000,000; hæmoglobin, eighty-nine per cent.

Increase absolute: Red corpuscles, 800,000; hæmoglobin, seven per cent.

Literature.

Bunge. *Lancet*, April 20, 1895.
Woltering. *Zeit. für physiolog. Chem.*, Bd. xxl, p. 186.
Macallum. *Journal of Physiology*, 1894.
Gaule. *Analytical Cyclopædia*, Sajous, vol. iv, p. 224.
Potter. *Philadelphia Medical Journal*, September, 1899.
Capolla. *Weekly Medical Review*, August 2, 1890.
Herschell. *Analytical Cyclopædia*, Sajous.

---

*Just why there is a drop in percentage of hæmoglobin I am unable to say, as no history of chill or hemorrhage could be obtained.

TREATMENT OF PUERPERAL ECLAMPSIA.

By E. M. HUTCHENS, M.D., Boonville, N. C.

Since reading Dr. N. B. Herring's article on "Puerperal Eclampsia," in the October number of the *Brief*, I have had the experience of treating two cases of puerperal eclampsia. As both of my cases made a good recovery, I thought I would write up treatment, thinking probably it would benefit some young brother in the profession, and perhaps save some poor woman's life.

CASE I.—Primipara, aged twenty-one, on November 17 last, was taken in confinement at full term. Patient complained all day of sharp, cutting, aggravating pains. Also, complained of some headache. Had been subject to headache for several days. I gave her for her headache about eight grains of chloral hydrate and fifteen grains of bromide potassium, which relieved her some. About twelve M. her pains set up right, she got into hard labor, head of child presenting, cervix soft and dilating. About two P. M. she vomited. In less than five minutes after vomiting she went into convulsions. Cervix now about fully dilated. The family, as usual on such occasions, was very much alarmed. The girl's mother asked me if I did not want them to send for another physician. I told her to use her pleasure about that. She wanted to know what physician I preferred. I told her to send for the nearest one. I did not take much time to talk, I was busy.

First thing I did was to inject hypodermically three-quarters of a grain of morphia. Next, I opened a vein in both arms, bled between a pint and a quart. Next I out with my bottle of chloroform to control present convulsion, until she could pass fully under the influence of the morphia. Soon the convulsion passed off and the patient knew her doctor and her sister, who were standing by her. She asked for a drink of water, which was given her. Then I injected eight drops of common tincture veratrum viride hypodermically. Soon my patient passed into a sound sleep, and was sleeping well when Dr. Burrus, of Jonesville, came to my assistance.

We decided to chloroform and deliver with forceps, which we did. Child was still-born. She had one light convulsion after she was delivered, which was very easily controlled with chloroform. Gave one-quarter of a grain of morphia hypodermically. Patient fell into sound sleep, and slept all night, waking up occasionally through the night. Next morning, I noticed some jumping and twitching when anything made a noise around her. I drew her water. I directed everything to be kept absolutely quiet about her room; put her on chloral hydrate, five grains, and bromide potassium, ten grains, every four hours, with ten drops sweet spirits of niter, and four drops of common tincture veratrum viride every four hours, alternately, for two days. Then put her on tincture of chloride of iron. Patient made a good recovery.

CASE II.—Primipara, aged nineteen. On December 15, her time being up went into convulsions about the middle of afternoon. I, being five miles away, did not reach her until eight that night. I was told that she had had three convulsions before my arrival. As evidence that she had had convulsions, I found her jaw dislocated, her mouth thrown wide open. She could not speak, could not eat anything, for she could not close her mouth. I at once reduced the dislocation, which gave me no trouble. She then began talking, and seemed to be in very good condition. I requested them to give her a cupful of warm coffee. I then examined, and found cervix dilated to the size of a half dollar. Her pains not working right, I introduced a soft rubber catheter, to try to excite stronger pains. After introduction of the catheter, I proceeded to dilitate cervix gradually with my fingers.

In about an hour her pains became stronger, which helped me in dilating cervix. In a short time she went off into another convulsion, her jaw dislocating again. I at once injected hypodermically three-quarters of a grain of morphia sulphate. Also, injected eight drops of common tincture veratrum viride in deltoid muscle of opposite arm; controlled present convulsion with chloroform. In a short time convulsion passed off, and my patient passed into a comatose state, which soon changed into a sweet sleep. I did not bleed in this case, as my patient was pale and anæmic. When my patient was fully under the influence of the morphia, I chloroformed. Gave chloroform to an assistant, as I had the cervix about three-quarters dilated. I succeeded in applying forceps to the child's head, and delivered her of a living child. Drew her water next morning, directed the room kept quiet, put her on chloral and bromide every four hours, and sweet spirits of niter and veratrum viride every four hours, alternately, for two days. Then put her on tincture of chloride of iron. Patient and child are doing well.

I believe with Dr. Herring that morphia is the thing to give in puerperal eclampsia, and give it hypodermically, in large doses. I have been in the habit of giving morphine in eclampsia, but not in such heroic doses. I do not believe there is any danger in injecting hypodermically one grain of morphia into the deltoid muscle of an eclamptic woman. My two patients, in whom I injected three-quarters of a grain, did not seem to be so profoundly narcotized. Neither one slept over three hours, and when they awoke soon slumbered off again. What seemed remarkable to me was that there was not a great deal of contraction of the pupils.

Dr. Herring asked the question, "Shall we bleed?" to which he answers "emphatically, no." Right here I do not exactly agree with the doctor. I think this a question to be decided by the physician at the bedside of his patient. If he is called to the bedside of an eclamptic woman, finds her in labor, and she is a large, plethoric woman, if he gets to her early I think it proper to bleed. If on the other hand, his patient is pale and anæmic, and especially if he reaches her late, I do not think it proper to bleed. I do not think there is anything to be gained by bleeding if convulsions come on after delivery.

There is another question upon which I do not exactly agree with Dr. Herring. That is his non-interference with the contents of the uterus. I also think this a question for the obstetrician to decide at the bedside of his patient. If he finds his patient in labor, cervix dilated, or partly dilated, I think the proper thing to do is to anesthetize patient while she is under a heavy dose of morphia, and deliver with forceps. If, on the other hand, the patient is not in labor, if there is no dilatation of the cervix, I think it proper to control convulsions and leave the case to nature.

Gentlemen, morphine and veratrum are the drugs, par excellence, with which to control puerperal convulsions. Bleed if indicated, if not leave off. Anesthetize and deliver with forceps if the woman is in labor, if not, control convulsions and leave the case to nature.—*The Medical Brief.*

A REMARKABLE CASE OF CHLORAL POISONING.

By PHILIP F. ROGERS, M.D., Milwaukee, Wis.

I was called a short time ago to the bedside of a middle-aged man, and found him suffering from the effects of prolonged worry and pretty hard drinking. He was restless and sleepless, and in a mental state bordering on melancholia, having repeatedly threatened suicide. He begged me to give him sleep, and along with gradual withdrawal of whiskey and substitution therefor of strychnine and tincture of capsicum I prescribed a two-ounce mixture containing chloral hydrate gr. x. and potassium bromide gr. xv. to the drachm, instructing the attendants to give him a teaspoonful every three hours with a double dose at bedtime if he was still restless, but no more. This was on Thursday. I was not sent for again till the following Monday, when the man's peculiar actions alarmed his friends. I found the patient curled up in bed with knees and chin approximated; his extremities were cold, and he was jerking and rolling fitfully about now and then to assume a new position. Breathing was slow and stertorous with frequent prolonged, loud, grunting expirations; the pulse was slow and soft, but full; the face was ashen gray with parched mouth and lips and swollen tongue, and there was almost complete stupor. On inquiry I found that since I had last seen him he had had the bottle of sedative mixture refilled four times, and had been drinking the stuff by the half whiskey glassful. He had slept and been wakeful by turns, but was withal in a happy mood and invited those about him to drink with him, saying it was "great stuff." Sunday night he had been in a state of happy delirium nearly all night, jumping out of bed and wandering unsteadily from room to room, but toward morning he lapsed into the stupid condition in which I found him. During all this time he had eaten heartily, but had taken little or no alcohol and scarcely any of the strychnine mixture.

On Sunday his hand had been so unsteady that he spilled considerable of the medicine on attempting to take it, and the amount so lost was about one bottleful (two ounces). During the three days, then, Friday, Saturday and Sunday, he had taken no less than eight ounces of the mixture, or six hundred and forty grains of chloral and nine hundred and sixty grains of potassium bromide! The treatment consisted in the application of heat and a hypodermic injection of strychnine gr.1-15. In a few hours the man was sitting up and chatting pleasantly, saying he did not know when he had had such a good time, although he could remember distinctly nothing of what had happened. Being upbraided for disobeying orders, he said I did not understand his constitution; that he required large doses to obtain any effect from medicines, and that what I had ordered was entirely inadequate. He praised my medicine highly and thanked me warmly for what I had done for him; but the next day and for several days thereafter he had for his companions "devils" of a deeper indigo hue than he had ever known before.

In view of the enormous quantity of the drug taken I regard his escape from death as little short of miraculous and attribute it to the fact that he had taken food freely and had frequent movements of the bowels.—*Medical Record.*

MANGANESE IN THE TREATMENT OF DYSMENORRHEA.*

The habit of dysmenorrhea tends to intensify itself in neglected cases, growing worse monthly, and harder to relieve; beginning early in the menstrual life and rapidly fastening upon the sufferer such a fear of the recurring pain that life becomes a burden. For this reason it is advisable that treatment should be instituted at as early a period as possible. Dysmenorrhea does not disappear of itself; it always grows worse if left alone. Therefore it is very bad practice to put off the mother of a young girl whose early periods already cause her great pain by telling her that time will bring relief. It will not; on the contrary, we have every reason to believe that each month will, if let alone, be worse than the last. But the ardor of the operating gynecologist has been such that many mothers, from fear, refrain from mentioning their daughter's ailment. It is in such cases that manganese offers the best means of relief and cure. It is extremely efficient in those young women whose dysmenorrhea seems due to functional neuralgia, beginning almost with the establishment of menstruation. If administered early in the course of the disease, great relief is experienced; if persisted in, the habit is, in many cases, readily broken up and the health of the sufferer saved from impairment. Such young girls should never be examined, even by the rectum, unless there is very positive evidence of serious local inflammation, until manganese has been given a full trial.

After the habit of dysmenorrhea has been established for years, in older women, it is a more difficult matter to destroy it, but in many instances it can be done. The most important thing to remember is that one should not be too soon discouraged. If a trifling improvement can be seen after two or three months of constant use of manganese, it means that a great relief can be given by it. One need not despair

---

*Abstracted from an article by Charles O'Donovon, M.D., Baltimore, in *Jour. Am. Med. Assoc.*

until four or five periods have passed with no benefit from the drug. In many cases it is not necessary to wait so long. If the case is a suitable one, the first succeeding period will be notably easier, and after that little or no pain will occur during the administration of the remedy.

I have found the black oxide the most satisfactory, given in doses of two grains, by itself or in combination with iron or other adjuvants, about an hour after each meal. It may be used for an indefinite time without any effect, and should be given constantly until its efficiency or inefficiency shall have become manifest. If benefit is obtained at once, I then order it to be taken for two weeks before the next period; if that has been nearly painless, it is given during one week before the following period. In successful cases this is usually enough, and taking the drug during one week just before menstruation insures a painless period. No deleterious effects follow its use in this manner. It should be continued indefinitely; usually after a few months the patient feels cured, and stops taking the pills; but this is apt to allow a return of the dysmenorrhea, especially in those women who have suffered for any length of time. In young girls the habit seems to be more readily destroyed, and the general systemic improvement renders the cure permanent. One must not expect cure, or even relief, in all cases.—*Med. Council.*

RICHMOND ACADEMY OF MEDICINE AND SURGERY.

Richmond Academy of Medicine and Surgery. Regular meeting held February 13, 1900, W. T. Oppenhimer, M.D., president, in the chair; Mark W. Peyser, M.D., reporter.

Dr. Stuart McGuire reported the following case. The patient was a woman, 68 years of age, who, in walking across her room, slipped and fell, striking the gluteal region. She had been in bad health for some time, and therefore, when he saw her, an hour after the accident, he was surprised, after hearing a history of the injury, to find her still dressed, walking about the room and apparently but little concerned. An intracapsular fracture of the hip was at once suspected. Her clothes were taken off, and she was subjected to a most rigid examination. There was no eversion of the foot; the limbs were of exactly the same length; flexion and extension of the thigh could be made normally without pain; concussion on the sole of the foot, the knee being held rigid to transmit the impulse to the joint above, gave no discomfort; and the most careful and systematic examination of the hip itself showed no change in its anatomical points. The patient's thinness amounted to almost emaciation. The only evidence of injury which could be detected was a slight bruise of the soft part. The patient was assured that her hip was not broken, and that all that was necessary for her recovery was a few days' rest in bed. Several days later she was advised to get up and use the limb. This she did, and on eight or ten occasions walked about the room, complaining of some stiffness and soreness, but moving without a perceptible limp and being able to hold up her skirts with her hands, demonstrating the absence of outward rotation of the foot on the injured side. Two weeks after the accident, the patient continuing to complain of pain, Dr. Hunter McGuire was called in consultation, and he carefully repeated the original examination, and being unable to detect anything abnormal, stated that he believed the continued discomfort to be due to the contusion of the soft parts and advised further rest in bed, the use of electricity and massage and a stimulating liniment. Four weeks after the accident, Dr. J. Allison Hodges was asked to see the case, and examine it not only from a surgical aspect but from that of a neurologist. He went over the patient thoroughly, and stated that there was no disease in the hip. Now comes the interesting feature of the case. One week after Dr. Hodges examined it, or five weeks after the date of the injury, Dr. Stuart McGuire again examined the patient, and was surprised to find the limb now three inches shorter than its fellow, the foot markedly rotated outward, and the case presenting a typical picture of intracapsular fracture of the hip joint. The questions which presented themselves were whether there had been no fracture, and absorption of the neck of the bone had occurred from the irritation of the contusion, or whether there was really no injury to the hip at all and the case was one of hysterical joint.

Dr. J. Allison Hodges said that when he saw the patient the legs were of the same length, there was no crepitation, and all movements were possible without pain, except what seemed to be of rheumatic nature. The patient walked two or three times across the room, exhibiting a little limping, but no evidence of fracture. Afterwards he had her put on a bed and jammed up the foot without eliciting pain; and he was then satisfied as to its non-existence, giving such as his opinion coupled with the statement that she was losing the use of the limb from want of exercise, and advising that she walk about the room. At that time there was no bruise, and he thought the trouble was hysterical, but hesitated to mention this. To-night was the first time he had heard of the later developments which made the case very interesting, especially as jamming with such force had been permitted. Dr. McGuire's solution of the problem was probably correct, if such a thing ever did occur, although Dr. Hodges thought that mental attention certainly aggravated the condition.

Dr. Jacob Michaux offered as an explanation of the case that there was possibly an impacted fracture so slight as to be overlooked, and that finally the patient, not being in good physical condition, in the effort to walk, it gave way.

Dr. Stuart McGuire said he did not believe the case to be one of hypnotism, because of the actual shortening that developed. He thought Dr. Michau's theory was correct, and had brought the case before the academy because of the medico-legal possibilities attaching to it.

Dr. M. D. Hoge, Jr., said that it had been brought out to-night that pain was not always a symptom of hip-joint fracture. Recently he had seen an old woman, quite stout, who, the night before, had stumbled and cut her face. She walked up-stairs that night and down again the following morning, in both instances with assistance. When he saw her she was sitting up in a chair and complained of pain in her face and foot only. Chloroform was administered, and intracapsular fracture diagnosed. The patient was now walking about with the aid of crutches. He could not conceive how a contusion could bring about absorption of the bone. If it were so, contusion anywhere, as of the shin, elbow, etc., ought to produce absorption of the particular underlying bone. He accepted Dr. Michaux's theory of the case previously reported. No callus was formed, and the two fragments of bone being locked just as the teeth of two combs when forced together, movements, as in walking, served to separate them.

Dr. Hugh M. Taylor said that the cases reported to-night should be sufficient to impress one with the importance of treating injuries about the hip-joint in the old way, as fractures. Manipulation resulted in harm. With an impacted fracture the patient walked as long as the impaction remained, during which there was no shortening nor much deviation or pain. He had never seen a case such as was described by Dr. McGuire; but like Dr. Hoge he could understand how walking or any other movement could develop it.

Dr. J. Allison Hodges reported the following case of vicarious menstruation, which occurred in a negress. The woman had become unwell in the morning; by 5 P. M. the flow stopped, and she passed a restless night, during which there was a moderate flow of blood through the teeth. At first bleeding occurred from the outside of the upper gums, then from the inside, and finally, about the middle of the day, from the lower gums also. Becoming considerable in amount, Dr. Hodges was sent for, and referred the patient to a dentist, who used various styptics, all, however, unsuccessfully. Afterwards, Monsell's solution with hot water checked the flow for a half hour. The doctor, called for the second time, found the patient's mouth filling with blood every ten minutes. After inquiry he came to the conclusion that the hemorrhage was vicarious, but it produced greater weakening than the normal flow. During the night hemorrhage ensued at intervals, and all the next day the same condition prevailed. In the afternoon he concluded to have made a wax cast of the mouth, and in the meantime employed different hemostatics without success, using also douches and purges to establish the normal flow. Monsell's solution was given in one drop doses much diluted, every four hours, and then the flow came on and oral hemorrhage ceased. During the previous night he saw that the urine contained blood. Chemical examaination showed both blood and three per cent. of albumin. Since then the urine had been examined three times, and each time the amount of albumin had decreased. To-day there was none. Blood appeared only twice, and that was during oral hemorrhage. The sudden stoppage of albumin and the large quantity of blood in the urine were unusual.

Dr. Geo. Ross reported the case of a man who years ago had a local lesion which was suspected to be of syphilitic origin. This was denied by the attending physician who, with local treatment, produced an apparent cure. Later he was seen by Dr. Ross, who gave constitutional treatment. During an attack of ozena a scale of the nasal bone was lost, after which the ozena disappeared. The patient subsequently developed epilepsy, which was, at first, mild, and then became a syphilophobe. It was decided, however, after consultation with Dr. Hodges, that syphilis was not present; but the patient's nervous system gave way and he had twenty-five convulsive seizures, during one of which an artery ruptured and produced hemiplegia. A like occurrence later caused death. There were two or three attacks of diplopia.

Dr. Hodges said that when he saw Dr. Ross's patient in consultation it was difficult from some points of view to believe him to be syphilitic, but from others to believe otherwise. Physical diagnosis was not absolutely reliable. In cerebral syphilis without treatment, authorities stated that symptoms developed not later than thirteen years. There must be cephalalgia with marked insomnia, and the cephalalgia must occur at a certain time in the twenty-four hours, usually in the evening; there must be no convulsion. In this patient convulsions did occur twenty-five years after what was supposed to be the initial lesion; and if these were not due to epilepsy, nephritis, etc., they must certainly have been due to syphilis. There had never been discovered, in him, disease of either the first or second cranial nerves, nor of the crura cerebri. At the time he saw the case he could not make out syphilis, but later developments would make it appear as such. Yet, if it was a case of cerebral syphilis it was the most unusual he had ever seen, there being as many symptoms against such a diagnosis as for it.

Dr. Michaux detailed the following case of carbuncle which occurred on the back of the neck of a man sixty years of age, hearty and strong. The carbuncle began six weeks ago, and was opened and swabbed out with pure carbolic acid, which was followed by alcohol and bichloride of mercury solution. For several days it was thought that the patient would recover without special incident; then the tissue above swelled and became indurated, but as they were draining well it was deemed best not to incise then. Later, he was forced to make two incisions just about the hair line. The inflammation spread slowly till it was one-and-a-half inches to the right, when another incision was made, which was treated in the same way and kept packed. Spreading continued till near the right ear, when incisions controlled it. Then the carbuncle spread to the left ear, being followed by incisions, etc., then upward, downward and under the angle of the jaw. The last set of punctures were in such close proximity to the large vessels on the left that he was afraid to make them freely. The carbuncle was dressed four or five times daily, peroxide of hydrogen being used in conjunction with the other remedies; and so far he had been successful in keeping down septic manifestations. Several days after each incision was made there appeared between them suppurative action going on in the follicles, and finally penetrating the skin. The condition of the patient now was critical. The carbuncle was the size of two fists. He had seen but one as large as this heretofore, the patient recovering, though suffering profoundly from sepsis.

Regular meeting, held February 27, 1900, with William T. Oppenhimer, M.D., president, in the chair; Mark W. Peyser, M.D., reporter.

Dr. Lewis Wheat read a paper on "Latent Gonorrhœa in the Male as a Factor in Diseases of the Female Organs of Generation." (See MS.)

DISSCUSSION.

Dr. J. S. Wellford remarked that when Noeggerath first stated his views of the effect of gonorrhœa in the husband on the wife he thought them very extravagant; but subsequent information had to a great degree established their accuracy. Indeed, in this respect and others, he thought that in a healthy subject he would prefer to treat a case of syphilis than one of gonorrhœa, as in a person easily managed the complications and sequelæ were frequently not so serious. When gonorrhœa in the female was confined to the vagina the treatment was comparatively easy; but he would request Dr. Wheat to give an outline of what he regarded as best when the uterus, ovaries and tubes were involved.

Dr. Stuart McGuire stated that so far as he could remember he had recognized in his practice but one case of acute gonorrhœa in a woman. Doubtless, many individuals suffering from the disease had consulted him and had been advised to use some antiseptic douche for supposed leucorrhœa. When these patients came to him it was usually in the late stage of the disease, when its results, or sequelæ, were the indications for surgical intervention. In the future he would give this class of cases more careful attention, and his treatment would be determined by microscopic examination of the discharges.

Dr. Hugh M. Taylor said that in his experience the majority of pelvic troubles was due more to septic parturition than to gonorrhœa; and that these troubles were as usual to-day as in the pre-aseptic era. He did not allude to the gross, but to the minor infection, which was more common than we were led to suppose.

Dr. W. W. Dunn said that where urethritis accompanied vaginitis it was well, besides using permanganate douches, to keep the vaginal walls separated by an antiseptic packing that would absorb the discharge.

Dr. Wheat in concluding the discussion said that as gonococci frequently remained latent for years in the posterior urethra it was exceedingly difficult to tell at what time marriage was safe. To determine this, he advised injections of nitrate of silver solution, which would stir up the old inflammation if present. The number of women consulting him for gonorrhœa in proportion to men was small; in fact, vaginitis or urethritis in women was very uncommon, even in prostitutes. If recognized it was only after it had attacked the tubes, or, more rarely, the uterine mucosa. The germs might remain latent in the vagina even through successive pregnancies, and then take on new life. This solved Dr. Taylor's problem as to the minor conditions in the parturient state. Lydston stated that the normal germs of the vagina by a species of evolution might produce gonorrhœa in the male urethra. Dr. Wheat said that rarely or never had he seen a virulent case of gonorrhœa in the male that was uninfected by streptococci; and that the joints of gonorrhœal patients took on septic trouble more readily than when infected by any other malady, except tuberculosis. He thought the best treatment was that which advocated thorough scouring of the cervix followed by its dilatation; scouring the uterus, curetting it, washing out with bichloride of mercury solution 1-2000, and packing with iodoform or moist bichloride gauze, distending it as much as possible. After these procedures the vagina was thoroughly scoured and lightly packed.

REPORTS OF CASES.

Dr. Stuart McGuire reported the following cases:

CASE I.—Nephrotomy for renal calculus. Mrs. L., aged 32 years, for the past two years had suffered with constant ache in the right lumbar region; and on three or four occasions there had been acute exacerbations closely simulating nephritic colic. Clinical symptoms pointed to a calculus in the kidney; and Dr. H. Stuart MacLean was called in consultation to verify or controvert the diagnosis by chemic and microscopic examinations of the urine. The latter after investigation stated that while he could not positively say there was renal calculus he felt sure of its presence, basing his opinion upon the constant presence of renal debris, a small amount of albumin and a large quantity of pus in strongly acid urine. Two separate attempts were made to get an X-ray picture of the kidney, both times with unsatisfactory results. Despite the uncertainty of the diagnosis the patient consented to an operation, which was done by him with the assistance of Dr. Peple. The kidney was readily reached and brought out; and palpation and exploratory puncture with a needle located a stone in one of the calices. This was removed through an incision made in the convex border. Bleeding was slight and easily controlled by deep and superficial sutures. Recovery had been uneventful, the only untoward symptom developed being pain due to the passage of blood clots from the pelvis of the kidney to the bladder. The stone in size, shape and appearance, closely resembled an Indian arrowhead, and was composed of a uric acid nucleus, around which had been deposited phosphatic salts.

CASE. II.—Abdominal nephrectomy for hydronephrosis. Miss W., aged 23, had a history of attacks of vague pain in the abdomen eight years ago, which was followed by the formation of a lump that had gradually increased in size until it produced considerable deformity. Urinary examination revealed no renal disease, the only abnormality being the existence of an unusually large amount of phosphates. Physical examination showed a movable, fluctuating tumor in the lower left part of the abdomen. It was about the size of a child's head. An accurate diagnosis being impossible; an exploratory operation was advised. This was agreed to, and was performed by Dr. Hunter McGuire. Through a median incision made below the umbilicus, the tumor covered by the posterior layer of the peritoneum, at once presented itself, and was seen to originate from the kidney. It was rapidly shelled out, and laid upon the skin of the abdomen. The ureter was ligated, divided, disinfected and returned to the cavity. The small pedicle which remained was tied in sections and cut off; and the abdominal incision then closed. The tumor, which was exhibited to the Academy, was a beautiful illustration of hydronephrosis due to occlusion of the ureter by an impacted calculus. The stone, as could be plainly felt, was lodged in the lumen one-and-one-half inch below the point of emergence of the ureter from the pelvis of the kidney.

Dr. Gordon asked Dr. McGuire upon what Dr. MacLean based his diagnosis. Pus and acid urine were sometimes found in cystitis limited to the neck of the bladder, and in pyelitis from other sources than calculi. It was well known, also, that the epithelium from the pelvis of the kidney and that from other portions of the urinary tract could not always be differentiated. He cited the case of a man now under his care who, in the past, had suffered from several severe attacks of renal colic—so called—and who claimed to have passed brick-dust deposits. Hematuria subsequently appeared, increased by exertion and relieved by copious draughts of lithia water. Pain in the back was now almost constant. Was the cessation of the hemorrhage due to dilatation of the pelvis, or to what? He had not detected uric acid under the microscope.

Dr. McGuire, in reply to a question from Dr. Gordon as to when a physician, knowing or suspecting the existence of a calculus in the kidney, was justified in regarding the case as surgical and asking for a consultation with a view to an operation, stated that every case must be judged for itself; that frequently a calculus in the kidney, after giving trouble for two or three weeks, would be passed through the ureter, and the patient be cured; that where a calculus remained for a longer time in the kidney, causing considerable pain and evincing through the urine signs of production of irritation and inflammation of the kidney, he believed an operation was imperatively demanded; that an uncomplicated nephractomy for stone in the kidney was followed by a mortality of less than 2%, and that he believed it would be much better, possibly, to subject a patient to an unnecessary operation when the risk was so small, than probably to allow a stone to remain in the kidney when the risk was so great, as it would inevitably produce destruction and disintegration of the organ, and ultimately terminate in death. Dr. McGuire then spoke of the additional evidence gained by urinary examination, X-ray photographs and the introduction of an ureteral bougie tipped with wax.

Dr. W. H. Parker reported the following case of aortic aneurism. The patient was a man, aged 61 years, anæmic, and thin, having lost sixty-one pounds in the last year. When first seen, the recti muscles were so tense that no thorough examination could be made. Three or four months before, he had passed pus from the urethra. Numbers of diagnoses had been made by himself and other physicians, among them being floating kidney, sarcoma of the kidney, of the intestines, tubercular kidney, etc. The patient was sent to the Sheltering Arms Hospital for operation; and the day before it was done Dr. Parker diagnosed abdominal aneurism. Upon opening the abdomen, with the assistance of Dr. W. W. Dunn, a large tumor was seen. It had no bruit, and he inserted a hypodermic needle but no fluid was withdrawn. A trocar was then introduced, precautions being taken to prevent hemorrhage, and blood came forth. The aperture was then closed without the loss of additional blood, the abdomen sutured, and the patient put to bed. Nothing eventful occurred till ten days later, when a stitch-hole abscess developed that extended downward to the iliac crest, then upward and backward to the ribs. This was treated by Dr. Dunn, and the patient seemingly progressed well till three or four nights ago, when he died. Death was due to hemorrhage, produced by the abscess eroding either the superficial or one of the mesenteric vessels. Upon post-mortem examination, it was seen that the aneurism extended from the celiac axis to the bifurcation of the aorta, and that it had eroded the vertebrae for a space one-fourth of an inch deep, two inches long and one inch wide. This was thought to be the cause of the intense pain which the patient had suffered for some time, and which had induced him to seek relief. The aneurism had not burst.

Dr. Taylor said that while the physical signs of the earlier stage of aneurism were not present in this case, those of the later stage were, the absence in the former instance being due to the presence of a laminated clot. He saw the patient in consultation, after the exploratory had been made, and decided that the case was an operable one. His idea was to obliterate the aorta by occluding it so gradually with a ligature that collateral circulation would have been established by the time occlusion had been completed. He believed that this could be, and would be done. Dr. Keen, with a few strands of floss silk, had tied the aorta for forty-eight days. In his next operation he would use silk tape, which was both stronger and broader.

STERILITY AND PELVIC DEFORMITY.

By JOSEPH BROWN COOKE, M.D., New York City.
Late Attending Physician St. Mary's Free Hospital for Children; Out-Door Department, Etc.

The following case belongs to a class not infrequently seen by physicians, and will serve to emphasize the importance of ascertaining accurately the fitness of a woman to undergo labor before steps are taken to render conception possible. A poorly developed or displaced uterus is so often associated with a poorly developed or deformed pelvis that the mere fact of sterility should at once suggest the *possibility* of the existence of a uterine cause of pelvic origin.

E. M., age twenty-eight years; American. Has been under the writer's professional care for the past ten years. About three years ago she was married, but after over two years of married life she had never conceived, although both she and her husband were very anxious for a child.

Examination showed a rather small uterus, anteflexed to a marked degree. The external os was exceedingly small and there was an abundant leucorrhea, which, she said, she had had for years. The patient was, in other respects, well nourished, strong and of healthy appearance, and, strange to say, had never suffered to any extent from dysmenorrhea or other menstrual disturbance.

The cervical canal was dilated and curetted and the parts treated with ichthyol and glycerine tampons for about ten weeks, during which time, of course, coition was forbidden. Within two months after the discontinuance of this treatment, conception occurred and the pregnancy progressed in a perfectly normal manner.

It is the writer's custom to make a careful pelvimetric examination of every obstetrical patient at least two months before the expected date of labor, and in this case, as a matter of convenience, the pelvis was measured at the beginning of the fourth month of pregnancy. The external measurements were as follows:

			Average.
Ext. Conjugat	16	cm.	(20.3 cm.)
Ant. Sup. Spin	24	"	(26 ")
Iliac Crests	25.5	"	(29 ")
Intertrochanteric	29	"	(31 ")
Post. Sup. Spin	7	"	(9.8 ")

The greatest shortening being in antero-posterior diameter (4.3 cm., or nearly 2 inches), and the other dimensions being nearly normal, the woman's appearance did not give any suggestion of pelvic deformity. Internal examination showed a flat rachitic pelvis with a true conjugate diameter of about 7 cm. The diagram will show the approximate size and shape of the pelvic inlet as compared with that of the average woman. That the true state of affairs was not learned when the uterine displacement was under treatment is not surprising, for anteflexion is a condition easily made out and the treatment consisted chiefly in applying solutions to the fornices through a speculum. The procedure affording the greatest degree of safety to the infant with the least possible risk to the mother seemed to be the induction of labor at the thirty-second week of gestation. This was accordingly decided upon and preparations were made for rearing the child in an incubator.

The Krause method of inducing labor was adopted, and labor pains began twenty hours after the introduction of the bougie. At this time the fetus was lying in the right occipito-anterior position and everything seemed favorable for a speedy delivery. The pains grew weaker instead of stronger, however, so the bougie was withdrawn and introduced in a different position. After twelve hours the pains began for the second time and continued with increasing strength and severity. Examination now showed that spontaneous version had occurred and the fetus was presenting by the breech.

The delivery of a living child being extremely desired, and the patient's condition being good. bi-polar version was performed and the vertex presentation restored. After ten hours of pain of great severity, during which time very little progress was made, forceps were applied and the child was extracted. It weighed three pounds and ten ounces and was as strong and lusty as could be expected under the circumstances. It was placed at once in the incubator (temp. 93° F.), but although it seemed to be holding its own for a time, it died suddenly, five hours after its birth.

The mother made a rapid and uneventful recovery.

In cases of sterility it is a very simple matter to make a careful pelvimetric examination of the patient before instituting treatment for the relief of the condition, and the heart and other organs should be thoroughly investigated unless the physician is already well posted in these matters through long professional acquaintance with the woman.

Pregnancy occurring in a patient suffering from chronic diffuse nephritis, valvular disease of the heart, or any other equally serious malady is even more apt to result disastrously than when pelvic deformity alone exists; and no woman should be made to undergo the discomforts of pregnancy and the dangers of labor unless she can be reasonably certain of having a living child without being herself subjected to greater danger than falls to the lot of every child-bearing woman.

In the case reported, it was only the writer's custom of making a pelvic examination at least two months before the end of pregnancy that saved the patient from Cesarean section or craniotomy. At best, she was put to considerable pain and discomfort, together with no little expense; all of which might have been avoided.

Sterility is a *symptom* only, and as it *may* be indicative of conditions rendering pregnancy and labor not only undesirable but actually dangerous to the patient's life. it should be so regarded until the contrary has been positively shown.—*The Medical and Surgical Monitor.*

CHILDBIRTH WITH SAVAGE AND CIVILIZED WOMEN.

The labors of savage women are known to be safe and easy. How does civilization render labor difficult? Dr. Reid holds that heredity is largely responsible; that women with small pelves tend to have daughters with a like peculiarity, and that the individual born with a large or small head has a tendency to transmit to his or her children a similar cranial formation. When a savage woman has a small pelvis or a large-headed child she generally dies in labor, and thus, generation after generation, narrow hips and large heads are eliminated, while the right proportion between head and pelvis is secured. In civilized countries many small-hipped and large-headed children are annually preserved. If these perished as they would among savages, the average difficulty of labor in the next generation would be appreciably ameliorated. But, as Dr. Purslow (Birmingham) pointed out, the difficulty of labor in civilized women was often due, partially at least, to deficient power of the expulsive muscles, the result of the use of corsets and the want of exercise. Posture may also to a certain extent be responsible. Savage women almost invariably assume the squatting position. If Dr. Reid's deductions are as sound as they are logical, there will be a large and increasing field for the gynecologist of the future.—*English Med. Review of Reviews.*

HEREDITY.

By JOSEPH SAGER, M.D., Celina, O.

The "Encyclopedic Dictionary" thus defines the word heredity: "The tendency which there is in each animal or plant in all essential characters to resemble its parent, so as to be of the same species." The conception of heredity is that like begets like, and individual species will produce its own kind. Cats have descended from cats and dogs have descended from dogs, apple trees bear apples, if you sow wheat you will reap wheat, and so on. We may still be more explicit: All that belongs to man is a body and spirit, which comes to him through his parent.

The human family is divided into five races, the Indian, African, Malasian, Mongolian and Caucasian. The race characteristic is hereditary. These races or divisions are divided and sub-divided into tribes and families. These tribes and families have their peculiar traits and characteristics. Many tribes and families have their own languages and dialects, but this does not exhaust the popular conception of the meaning of heredity. It is the individual heredity; by this heredity we mean that an individual will beget a child which is the image of the father or mother, or both—the personal resemblance in the general structure of the body, in the height, size, tendency to obesity or leanness, the color of the hair and eyes. There is also transmitted in the organism certain diatheses which will favor certain diseases, such as consumption and other diseases of the like. This is what is called, or may be called, organic heredity or direct heredity. But by the law of heredity the child should inherit the peculiarities of the parent, physically, mentally and morally. If, for instance, the parent is a thief, a professional one, the child may be expected to inherit a thieving disposition, and readily follow in the business of the parent. If the parent is excessively proud, avaricious or hard-hearted, or kind-hearted and benevolent; if the parent has a peculiar taste for the study of mathematics or languages, mimic or drawing; if wide-awake and aggressive, or indolent and shiftless; if content with life in the slums, at home in squalor and filth, or ambitious of high position and noble attainments, by the law of heredity the child will be expected to take after the parent, prove his title to be a "chip out of the old block."

But right here come in certain strange and puzzling facts, that practically so completely complicate the whole question and mix it up that we become confused and liable to mistake as soon as we venture to predict from the known character of the parent what will be the natural bent of the child. For we know that children who were taken from houses bathed in slums, squalor and filth have become healthy, hearty and strong-minded men and women; but some might attribute it to atavism—that is, the inheritance had descended from grandparents or greatgrandparents through father or mother.

There is a solution to this intricate problem, and that is mimicry of heredity or mimic heredity. In an article, written by George Bachelor for the *New World* in February, 1894, he says: "A child is born with organs, aptitudes, powers, possibilities, desires, impulses, and with instincts, but it is born without ideas, knowledge, habits or moral character. These furnishings of the mind however, are at hand, waiting to press into the new-born child and become a part of him; once inside, they are no longer a part of his environment, but are commonly supposed to have been born in him." There is much in this statement. We are constantly charging to organic or direct heredity follies and sins that are clearly the outgrowth of environment. Suppose for the sake of argument, that a baby boy, well nourished, is born of parents with strong appetite for the intoxicating cup or a thieving disposition—in fact, the parents have bad habits all around. Now suppose these propensities are latent in the boy; if these propensities, bad as they are, find no food to feed on, but, on the contrary, if the boy is kept clean, with good surroundings, good wholesome food, good moral training, educating him for some good purpose, where will these bad propensities be at the end of fifteen years? The answer is, they are starved, but instead the brain is moulded and cultured for a nobler purpose.

It is freely admitted that a child will inherit character, peculiarity and proclivities from its parents, and if bad, if allowed to remain with its parents, surrounded with bad influences and bad precepts, and the brain is moulded by bad training and bad environments, of course there is a bad child growing up.

In giving this subject a retrospective view, glancing at the human family in its primitive stage and the progress it has made to the present time, history says, what a change! And what did it? What is man to-day? It may reasonably be inferred that civilization would not have made its present advances, that the mental capacity would have remained largely undeveloped, had not the sense of helplessness and the pressure of wants, which have contributed to call forth his resources, to stir up the gift of Providence, to rouse reason and inventive powers to action, would otherwise have continued dormant and to excite benevolent affection by the demand man is compelled to make for society of his kind.

A healthy surrounding, a peaceful surrounding, a surrounding that has a tendency to elevate, educate and magnify the human family, is what improves health, wealth, and makes character. This applies to nations as well as to individuals. Nations that have been isolated, so there was no contact or interchange with the more civilized nations, are in the background. China is one of the nations which is in arrears with her civilization on this account. The Chinese wall, which was built 220 years before the Christian era, has isolated that empire from other civilized nations for more than two thousand years. Until within the last century China was no farther advanced than she was two or three thousand years ago. Japan is coming to the front out of the darkness since she is in contact and interchanging ideas with the more civilized nations. History has repeated itself in this line again and again.

But to return to individual heredity. While a vast array of facts may be presented to prove that as a general thing the qualities and propensities of parents are transmitted to their offsprings it is also true that the law of heredity is by no means uniform in its operation. There are cases on record where not the least mental or moral resemblance exists between the offspring and the ancestors. Ex-Governor Burke, of North Dakota, who, when a small boy, was taken from Five Points, New York, to the Western prairies and placed with well-to-do farmers, grew up and became Governor of North Dakota. Listen to what he says: "I believe that the tendency to viciousness may exist in the child, but very often it is dormant; the child is not yet old enough to allow it to have been developed. I believe if such a boy were to continue to live in the same environment to which he had been accustomed from birth, associating with the children of his class, many of whom might be worse than himself, I believe that under these circumstances the hereditary taint would in course of time show itself; but we get such boys when they are young, we transplant them to a wholesome farm life, where they learn something of the amenities of the family and domestic existence, if they had this dormant hereditary tendency it is soon eradicated under the new and wholesome conditions."

Hon. Henry Wilson, once Vice-President of the United States, had the same experience. He was born in a home of squalor and intemperance. When he was ten years old he was bound to a family by the name of Wilson (his name was Colbath). When he came to mature years he had his name changed to Wilson by applying to the Legislature of New Hampshire. Almost everybody is familiar with the dinner he gave to his friends at the Boston Hotel after his first election to the United States Senate. Some of his friends wished to know where the wineglasses were. Mr. Wilson, with much feeling and courtesy, said "Some of you know how the curse of intemperance overshadowed my youth."

And so we might continue our list with men and women of low birth and bad surroundings, but by being transferred to good surroundings and good training, and had the benefit of education, leaped into prominence. Socrates, esteemed by the oracle of Apollo the wiset of all men of his age, was the son of a low woman. Everybody remembers the name of Henry Morton Stanley, the great African explorer. His original name was John Rowland. He ran away from home, shipped as a cabin-boy, came to New Orleans, where he was befriended by a merchant of that place, which was the making of him.

Put a Chinese baby boy into an English cradle, let him never speak anything but English, and, above all, never be reminded of his foreign ancestry. He will grow the stature of a Chinaman and have the features like him, and all that, but the tradition of three thousand years will fall away and be to him as if they never had been.

The scientific view of heredity is that any bad trait or propensities which are transmitted to the child are dormant at birth. They will remain dormant by starving them with good surroundings, good moral training, good culture and education. The same is true of a child of good parentage. Whatever good traits there may be are transmitted, but dormant at birth. Put this child in a home of squalor and filth, let it grow up with these surroundings, and the result is a bad child.

Koch declared when he made his scientific research for the germs of tuberculosis that consumption was contagious and not hereditary. A child born of tuberculous parents may have weak lungs. Remove the child from its home at once at birth into a healthy atmosphere, where the atmosphere is not tainted with tuberculosis, and this child, as it grows up, is no more liable to consumption than a child not born of consumptive parents in the same atmosphere.

From the foregoing hypothesis, the deduction is that the environment and surroundings, culture and training, are what develop heredity.

ALCOHOLIC GASTRITIS.

By J. A. HOFHEIMER, M.D.

Late Attending Surgeon, Harlem Hospital Dispensary, New York.

While the causative agents of gastritis may be other than alcoholic, from the writer's experience in public and private practice, by far the great majority of cases seen have been induced by over indulgence in spirituous liquors. During my service in the medical division of one of the city dispensaries, opportunity was taken to study a large number of cases of gastric disturbances, ranging from simple indigestion to the more malignant diseases. Of between 300 and 400 cases noted, about 75 per cent. were traceable to over indulgence in alcoholic drinks; and the majority of these patients partook of some form of spirits before breakfast ("eye-opener" or "appetizer" so-called). The quantity varies according to the idiosyncrasy of the patient and the form of drink ranged from the higher concentrated liquors, as whisky, gin, etc., to cold lager beer. In a couple of instances the patients drank ether, having acquired a taste for it while hospital inmates, where they had been able to obtain partially emptied ether cans.

Preliminary to studying this disease it is well to understand the action of alcohol upon the digestion and the secretions. MacArthur[1] says: "Small quantities of alcohol, properly diluted, taken into the stomach, produce an agreeable sensation of warmth. It is quickly absorbed. A turgescence of the capillary plexus of the mucous membrane occurs, which is speedily followed by a free secretion from the gastric follicles, due in all probability to the increased supply of blood, and the stimulation of the glandular orifices." Continuous and excessive stimulation will give rise to a pathological condition, and gastric catarrh will result. Alcohol causes, by its constant over-stimulation and irritation, an increase of the connective tissue and consequent shrinkage of the cells in the gastric mucosa, also producing secondary constriction of the stomach capillaries, thereby reducing the secretions. It likewise interferes with the digestive processes by rendering the albuminoids less soluble and precipitates the pepsin.[2]

Da Costa[3] claims that gastritis is rarely acute, except in toxic cases; and experience bears out this theory, especially in these subjects. Patients are rarely led to consult a medical adviser until they find themselves unable to retain food, and are being driven by an insatiable thirst to greater extremes of indulgence, and frequently are attended to when just on the border line of delirium tremens.

The symptoms, however, in most of my cases, were similar, varying only in intensity. They complained of pain over the epigastrium on ingestion of food; a sense of fullness and nausea; distaste for food, but a craving for liquids, great thirst being a prominent symptom. The usual history was that upon arising in the morning, after a somewhat restless night, disturbed more or less by dreams, the patient experiences a feeling of fatigue, and occasionally has an attack of vertigo. If unable to resist the desire, a drink of some stimulant was at once indulged in, to be followed later by another before breakfast. This meal in the vast majority of cases was very light,—patient had no appetite. Formerly the drink had stimulated a desire for food, now it is taken in place of solid nutriment, and the weakened stomach rebels.

Severe coughing fits attack the patient, often before eating, but almost always afterward, causing him to vomit his meal and a mass of thick ropy mucus, sometimes stained by the gastric secretions, but generally of an opaque, viscid appearance. If much retching occurs, blood will be mixed with the mucus in striae, indicating the rupture of congested capillaries, and frequently denoting ulceration. The whole picture is evidence of the pronounced irritation of the gastric mucosa.

This vomiting does not persist after each meal, frequently not being repeated after the morning collation. But that there was a serious arrest of the digestive processes is manifest by the epigastric distress; colicky pains; irregular bowel action; also the gaseous eructations; coated tongue and foul breath. Unless checked, the inflammatory condition progresses, extending from the stomach through the pylorus to the duodenum, communicating with the liver and the intestinal canal, complicating the original gastritis with a duodenitis, and more often with catarrah of the bile ducts,[4] tending later to the formation of adventitious tissue and cirrhosis of the liver.

Together with the symptoms pointing to the digestive disturbance were those referable to the cerebro-spinal system. The headache indicative of congestion; vertigo and tremors, showing the intense reaction of alcohol upon the spinal cord, and partly due to the mal-assimilation of food; the sluggish digestion, allowing the food to decompose in the stomach and intestinal canal, the absorption of ptomaines taking place.[5]

Alcoholic gastritis is amenable to treatment, if the patient is obedient and can exercise sufficient self-control. Many, however, have unfortunately lost that power so necessary for a speedy cure, due to the prolonged reactionary effect of alcohol upon the mental faculties. The medical adviser must gain his patient's confidence, and convince him that it is the drug which has wrought him so much harm. The deluded patient generally insists that as he "does not drink to the point of intoxication," it is impossible that what little he does indulge in can be a causative factor in his illness; or he will instance the fact that friends of his drink more than he does, but that they are not similarly affected. These arguments should all be met by explaining to the patient the pernicious effect of alcohol upon the system.

The first indications for treatment are to clean out the gastro-intestinal tract, removing all undigested debris, and to strengthen the stomach, and if an alkali be added to the water, quantities of mucus will be washed out, giving the patient great relief. Should there be an objection to the use of the stomach tube, the writer has given one-half pint of hot water, in which one-half dram of sodium bicarb has been dissolved, 10 minutes before each meal. A dose of calomel and ipecac, followed by a saline aperient will be efficacious, not only in promoting peristalsis and gastrohepatic stimulation, but it will act as a disinfectant to the entire digestive tract. Bismuth salts are also effective, having an astringent and antiseptic action; the subnitrate, salicylate or B-naphthol combinations are favorites. The gastric secretions are apt to be hyper-acid,[6] therefore the alkalies prove beneficial. The combination of the peptogenic compounds, as lactopeptin, papoid, pepsin, etc., with potassium or sodium bicarb, or given in conjunction with the excellent mistura rhei et sodæ of the U. S. P., will not only aid digestion but exert a benign influence upon the stomach.

For the gastralgia it is rarely necessary to use opiates but, should the case require it, my preference has been for codeia. Experience with many of my later cases had led me to use phenalgin with some one of the peptogenics with beneficial effect. Arsenic is also a useful drug, and is "indicated where the nervous disturbance is disproportionately great to the extent of the lesion." Small doses of Fowler's solution, well diluted, will generally arrest the nausea and vomiting; it acts especially well when given with aqua calcis.

For the headache and neuroses which accompany this disease, nerve sedatives may be required; but care must be observed in prescribing this class of remedies: First, that our patients should not become addicted to the drug habit; the prolonged use of alcohol as previously observed weakens the mentality and renders the resistance to the chloral and similar drug enslavements feeble; second, sedatives that act as cardiac depressants are to be avoided whenever practicable, the degenerative changes which occcur in all other vital organs also are manifest in the cardiac weakness.

Should it become necessary to give chloral, it is best to combine it with digitalis or aromatic spts. of ammonia; but the combination of natrium bromide with phenalgin (in 5 or 10-grain doses of each) has been more effective in my hands.

Phenalgin is a coal-tar product, and so combined with ammonia that while its sedative action is marked, it exerts a tonic effect upon the heart;[8] and its decidedly alkaline reaction makes it a valuable adjuvant in the treatment of these cases.

The dietary outlined should consist of bland food: Clear soups (free of grease), milk oumyss, buttermilk, eggs, rare, lean meat (in moderation) stale bread; soda crackers, green vegetables, and occasionally of farinaceous foods. Starchy substances are more prone to undergo fermentation than other dietary articles, and care should be observed not to overindulge in them and by so doing add to the irritation of the already weakened organs. Coffee and tea should be avoided, as well as all rich, spiced dishes.

A digestant given with each meal will materially aid assimilation; the bowels should be regulated; the aperient salines or mineral water will often be all that is needed, though an occasional dose of calomel or some cholagogue may be indicated.

For the poor appetite the bitter vegetable tonics are of service and the combination used in the city institutions, known as the "four tinctures" are very good. Its formula is:

℞ Tr. Nuc. Vom.................................
Tr. Capsisi.... ....āā ʒi
Tr. Cinch...... ....
Tr. Gentian ....āā ℥i
M. ʒi before meals in water.

With these remedies I have sometimes combined resorcin in one to three grain doses, and found its antiseptic action of benefit.

One caution should be given our patients, to abstain from any spirituous beverage when the stomach is empty, "alcohol acts most injuriously when it is but slightly diluted and taken in an empty stomach."[9] An occasional glass of light wine or beer with a repast does no harm, but the promiscuous drinking of alcoholics between meals and before breakfast is to be condemned as being the causative factor in the majority of cases of gastric catarrh.

BIBLIOGRAPHY.

1. L. L. McArthur, Reference Handbook of Medical Sciences, Vol. 1, p. 103.
2. J. V. Shoemaker Materia Medica, Vol. 2, p. 415.
3. Da Costa Physical Diagnosis.
4. Roberts Bartholow, Pepper's System of Medicine, Vol. 2, p. 1052.
5. Wm. Flint, Reference Handbook, Vol. 6, p. 633.
6. T. W. Mills, Reference Handbook, Vol. 2, p. 466.
7. Edward Curtis, Reference Handbook, Vol. 1, p. 342.
8. Op. Cit., N. Y. Med. Journal, Dec. 24th, 1898.
9. S. G. Armor, Pepper's System, Vol. 2, p. 465.

323 West 126th street, New York City.

REPORT OF THE INDIAN PLAGUE COMMISSION UPON HAFFKINE'S ANTI-PLAGUE INOCULATION.

We have received from the Under Secretary of State for India a copy of the fourth chapter of the forthcoming report of the Indian Plague Commission. This chapter has been issued in anticipation of the publication of the complete report, in recognition of the practical importance of the subject with which it deals. The chapter in question, which covers some eighty-seven pages of foolscap size, is devoted solely to a consideration of Mr. Haffkine's method of prophylactic inoculations, or, as they are termed in the report, "anti-plague inoculations."

It is impossible to sum up in a few words the very extensive ground which this chapter covers. It may be said, however, that it is mainly a close but lucid criticism of a large mass of material, statistical and otherwise, which was placed before the members of the Commission in many different parts of India; that this is supplemented by the results of certain special observations and experiments made by the members of the Commission themselves or undertaken by others at their request; and that it ends with a number of definite conclusions and recommendations to which the consideration of this material naturally leads. It is to the latter that most readers will probably look first, and by that very large body of persons in this country who have been awaiting a definite "yes" or "no" verdict as to the value of Mr. Haffkine's method the answer required will be found in the last paragraph of this chapter of the report. "We cannot," that paragraph runs, "bring to a conclusion this consideration of anti-plague inoculation by Mr. Haffkine's prophylactic fluid without expressing our sense of the importance of the method which Mr. Haffkine has devised and of the results which have been achieved by it. The credit due to Mr. Haffkine is the greater because the difficulties with which he had to contend in this matter could only have been overcome by great zeal and endurance. Mr. Haffkine's work on anti-plague inoculation, while not based on any new scientific principle, constitutes, it seems to us, a great practical achievement in the region of preventive medicine." From these remarks it will be seen that, in general terms, the value of the method of prophylaxis in question is fully endorsed by the Indian Plague Commission. Notwithstanding the severe and searching criticism to which the method and the results claimed for it are subjected, and in spite of certain obvious defects in both (which are pointed out in detail in this chapter), the Commissioners consider Mr. Haffkine to have performed a great life-saving work in the face of almost insuperable difficulties.

The principal conclusions of the Commission in regard to the prophylactic naturally group themselves into two divisions: Firstly, those concerned with the protective effect of the inoculations upon individuals and communities; and, secondly, those concerned with the feasibility of adopting a general policy of inoculation as a practical measure against the ravages of plague. We quote in full the conclusions arrived at under each of these heads.

Firstly in regard to the protective value of the prophylactic inoculations the Commission summarize their conclusions as follows:

I. Inoculation sensibly diminishes the incidence of plague attacks on the inoculated population, but the protection which is afforded against attacks is not absolute. On the one hand, plague has attacked persons who have undergone inoculation as many as four times in the course of two years previous to their attack. On the other hand, as many as eight per cent. of the inoculated population may suffer from plague, as was the case in Bulsar. Many varying influences have been at work in determining the rate of attack in different places, and it is impossible to give a numerical expression for the measure of protection against attack which inoculation confers.

II. Inoculation diminishes the death-rate among the inoculated population. This is due not only to the fact that the rate of attack is diminished, but also to the fact that the fatality of attacks is diminished.

Here, again, no numerical expression for the amount by which the death-rate is diminished can be given.

III. Inoculation does not appear to confer any great degree of protection within the first few days after the inoculation has been performed. This fact, we may note in passing, has an important bearing on the risk of infection which would be incurred by recently inoculated persons if they were left behind in surroundings so plague-infected as to render their evacuation by the uninoculated desirable.

IV. Inoculation confers a protection which certainly lasts for some considerable number of weeks. It is possible that the protection lasts for a number of months. The maximum duration of protection can only be determined by further observation.

V. The varying strength of the vaccine employed has apparently had a great effect upon the results which have been obtained from inoculation. There appears to be a definite quantum of vaccinating material which gives the maximum amount of protection; and provided that this quantum can be injected in one dose, and provided also that the protection turns out to be a lasting one, re-inoculation might with advantage be dispensed with. The best results of inoculation will only be obtained after an accurate method of standardization has been devised.

Secondly, in regard to the feasibility of adopting inoculation as a general plague measure the Commission formulate the following conclusions:

1. Experience gained hitherto has shown that it is very seldom possible to get a large proportion of the inhabitants of an uninfected place inoculated.

2. It has been possible, where the inducement of exemption from segregation and eviction has been offered, to get a large proportion of the inhabitants of an infected place inoculated quickly.

3. It has been possible in one place, Mysore city, even where no inducement that touched the great mass of the people could be offered, to get a considerable proportion of the inhabitants of an infected place inoculated quickly.

4. It has been possible, also, to induce a large proportion of particular communities, such as the Khojas of Bombay and Karachi, to be inoculated under the influence of their leaders.

The recommendations based upon these conclusions, and on the additional "consideration that it is advisable to make the operation as effective as possible, as little inconvenient as possible to the person inoculated, and as easily carried out as possible by the inoculator," are as follows:

I. We have already insisted on the necessity for the accurate standardization of the vaccine, as being essential to the attainment of the best results, both as to the protection conferred and as to the duration of that protection. We have pointed out, also, that the introduction of an accurate system of standardization may possibly obviate the necessity of employing two successive inoculations.

II. With a view to dispelling the natural fears of the people, and avoiding all unnecessary risk to the inoculated, and further, with a view to enabling the inoculations to be carried on with the least possible amount of attendant inconvenience, we would insist upon the necessity that stringent precautions should be taken to ensure that all the vaccine used is quite free from contamination, and we would recommend that the volume of the necessary dose should be made as small as possible.

III. With a view to removing any possible ground for distrust as to the conveyance of disease by inoculation from one person to another we would recommend that the syringe should be sterilized in the presence of the person about to be inoculated.

IV. We are of opinion that inoculations under the safeguards and conditions stated above should be encouraged whenever possible, and in particular it seems to us desirable to encourage inoculation among disinfecting staffs and the attendants of plague hospitals.

Although occupying the last pages of the section of the report now issued we have quoted these conclusions and recommendations near the commencement of this notice for the reasons already stated, for the present we leave them without comment and proceed to discuss briefly the larger mass of subordinate and detailed conclusions arrived at in the body of the report, upon which the main conclusions and recommendations just quoted are based.

The section of the report now issued opens with a brief résumé of the history of preventive inoculation from the discovery of small-pox inoculation down through the discovery of vaccination, the work of Pasteur upon anthrax, that of Ferran upon cholera, and the more recent work of Haffkine himself upon the last-named disease before he took up the subject of plague prophylaxis. It is unnecessary here to dwell upon this preliminary review of what is familiar to most readers who have any acquaintance at all with the history of preventive medicine. Coming to the subject of inoculation against plague it is pointed out that the first experiments in this direction were those of Yersin, Calmette and Borrel, who in 1895 made a number of comparatively successful experiments on the production of immunity against plague in rabbits and guinea-pigs by the hypodermic injection of dead cultures of plague bacilli. It was left to Mr. Haffkine to apply successfully a similar method on a large scale to the prevention of plague in human beings.

The method followed by him is conveniently discussed under the following different headings:

I. The method of preparing mass cultures of the plague bacillus.

II. The method of controlling the purity of those cultures.

III. The method of killing the plague bacilli with the view of converting the culture into an immunizing material.

IV. The method of decanting and bottling the prophylactic fluid.

V. The method of ascertaining that the vaccine is free from contaminating micro-organisms and the precautions which are adopted for preventing the growth of such organisms.

VI. The method of standardizing the vaccine.

VII. The composition of the vaccine.

VIII. The volume of the prescribed dose.

As to the mode of preparing the mass cultures, the report expresses full approval of the methods adopted to avoid the use of such animal products as might be offensive to the feelings of the natives of India, and at the same time to produce a growth in mass on a liquid substratum and to provide for the efficient aeration of the cultures. Approval is also, on the whole, expressed of the second point under consideration—the method of controlling the purity of the cultures—though at the same time it is pointed out that to rely solely upon "the specular appearance of the colonies of plague bacilli, seen from behind by the reflected light through the depth of the agar," which is the method hitherto adopted, is one which, in less experienced hands than those of Mr. Haffkine, could scarcely be regarded as a trustworthy index of the purity of the culture.

The method of killing the cultures of plague bacilli hitherto practised—by subjecting them to a temperature of 65° C. for one hour—is also fully approved as being the routine method adopted by every bacteriologist for a similar object. It is, however, pointed out that Mr. Haffkine has made no experiments upon the effect of this heat, or upon the effect of the addition of ½ per cent. of carbolic acid as practised by him, upon the immunizing powers of the fluid. The German Plague Commission has, however, shown that as regards the bacterial sediment in the prophylactic fluid its immunizing powers are in no way diminished by the heating process, and the authors of the present report themselves have proved by experiment that the same is true of the supernatant fluid. The curious fact is added that the experiments of the German Plague Commission showed that the addition of ½ per cent. carbolic acid had no effect upon the immunizing powers of a *heated* plague culture, although it completely destroyed these powers in an *unheated* culture. No explanation of this curious fact is offered nor is any attempt made to determine its significance.

The methods of decanting and bottling the fluid and of securing its sterility are naturally discussed at considerable length. The mode hitherto adopted—of storing the fluid in ordinary medicine-bottles closed by corks and sealed with sealing-wax—is one which obviously presents very great difficulties in ensuring sterility, and in spite of various methods of sterilizing the bottles, the corks, and the syphon, the process of syphoning off an organic fluid such as the plague prophylactic from flasks into bottles cannot, it is found, be accomplished without admitting, in a certain proportion of instances, outside contaminations. It will be recalled that Colonel Lawrie, I.M.S., of Hyderabad, went so far as to condemn, in most unmeasured language, the entire use of the prophylactic in consequence of the contamination of a certain proportion of bottles. The members of the Plague Commission are more moderate in their criticism. They discovered by a series of accurate experiments that in some 22.5 per cent. of bottles contaminations were present, which, in their opinion, were due partly (but not "almost entirely," as Mr. Haffkine urged) to imperfections in the sealing of the bottles and partly to the method of syphoning off the fluid from the flasks into the bottles. They, further, while urging the necessity for devising some method which shall ensure the absence of such contaminations, fully admit that, from a practical point of view, the presence of these contaminations has never been shown to have such harmful results as might be, and have been, urged against them on *a priori* grounds. "We have not," they say, "had any evidence laid before us which goes to show that any serious consequences have resulted from the defect in sterility which was spoken of above. We made careful inquiries into this question in the various centers where anti-plague vaccinations have been performed. In the overwhelming majority of cases no evidence was adduced to show that any injurious effects had supervened upon inoculation. In a few isolated cases, however, there was evidence that abscesses had occurred in the vaccinated at the seat of injection." It is added, however, that it is impossible to assert that such abscesses, or an occasional long-continued reaction at the seat of inoculation and continuance of fever, were in truth due to these contaminations and were not merely toxic effects.

The method of standardizing the prophylactic hitherto in use has been of a very simple, not to say primitive, character. It has consisted in holding one finger behind the flask containing the fluid and judging by the degree of opacity present whether the fluid was of ordinary strength, and therefore to be administered in the standard doses of two and a half cubic centimeters or of such strength as to be administered in fractions or multiples of that dose. In other words, a rough estimate of the amount of sediment (or dead bacilli) present has been taken as an estimate of the immunizing powers of the fluid. A second method of estimating its powers has been by observing its effects upon the first ten or twenty patients inoculated, the strength aimed at being such as to produce an average temperature in the persons inoculated of 120° F. The difficulties and objections in the way of both these methods are very obvious, and it is not surprising that the Commission dwell on the imperfections of both methods. The difficulties in the way of standardizing a fluid of the kind and of obtaining an accurate dose of the immunizing material are indeed exceedingly great. No systematic method, it is pointed out, has been hitherto practised for ascertaining the virulence of the cultures originally employed for the production of the prophylactic. Further, it is shown that, while the sediment contains the great bulk, if not the entirety, of the immunizing material, the supernatant fluid may in some instances contain a considerable amount of toxins. Where very large doses of a particular sample of the prophylactic are recommended there can be no certainty that a dangerous dose of these toxins may not be introduced. No attempt, it is also pointed out, has hitherto been made to ascertain the weight of the sediment, or dead bodies of bacilli, injected in a given dose; and in view of these considerations the members of the Commission are compelled to state that they "cannot but take a serious view of the fact that in a case like the present, where the estimation of the virulence was neglected, the weight of the bacterial sediment in a prescribed dose was in some samples of the vaccine seven times as large as in other samples."

It is obvious from these statements that much yet remains to be done before the practice of inoculation with a fluid of this nature will fulfill all the conditions which sound scientific reasoning rightly demands of it. For the present—and this in itself is no small achievement—the method may justly claim to be a practical success and very nearly, if not quite, to attain to the high ideal of a certain and safe prophylaxis against one of the most deadly of all diseases. It is, moreover, founded upon a strict scientific basis, though it is clearly in many and important details open to the charge of imperfection and empiricism. Time will doubtless remedy these defects, and it is certainly regretable that the members of the Commission have contented themselves with merely pointing out these imperfections and the necessity for overcoming them and have not, with some minor exceptions, made any definite suggestions or recommendations as to the manner in which they should be overcome.

The statistics of the inoculations in various centers undergo strict investigation. The principal observations upon the effect of the inoculations have been made in Bombay, Daman, Lanauli, Kirki, Undhera, Hubli, Dharwar, Gadag-Betigeri, Bangalore, Karachi, Bulsar, Belgaum, and some other towns and villages. For the present we must content ourselves with this enumeration of places and with the brief statement that, while the criticism of the evidence brought forward in each of these places is largely of the nature of an academic discussion of statistical material, it ends in almost every instance with a free admission that the inoculations did largely reduce the mortality in the given place. To these criticisms and to the objections urged against Mr. Haffkine's method of expressing numerically the reduction in mortality brought about by the inoculations we may, perhaps, refer on a future occasion.

REPORT OF A CASE OF TUBERCULAR ARTHRITIS OF THE KNEE—WITH REMARKS.*

By J. W. HENSON, M.D., Richmond, Va.
Professor of Anatomy and Demonstrator of Orthopedics in the University College of Medicine, and Surgeon to Virginia Hospital.

Last spring, a negro boy, 12 or 13 years old, suffering with tubercular arthritis of the knee of long standing, was put in my care by a brother physician. Suppuration had been going on for some time, and an ugly looking sinus on the inner side of the joint led down to necrosed bone. It was a nice question whether to amputate or trust to the scoop. I decided, for reasons to be presently stated, in favor of the latter. The joint was freely opened by an incision curving downward, the center of the incision sweeping below the patella. This bone was so much diseased that it was deemed wise to remove it. The inner condyle of the femur and inner tuberosity of the tibia were extensively necrosed; the outer condyle and outer tuberosity were also diseased, but less extensively.

---

* Read before the Richmond Academy of Medicine and Surgery, Jan. 23, 1900.

With a Volkmann spoon, everything diseased as far as could be ascertained was removed, the joint thoroughly irrigated and the incision closed; but not doing well at the end of five or six days, it was reopened, suspicious tissue scraped away, and free drainage provided. The joint is now ankylosed but well.

When we have in charge a case of articular arthritis, it should be our duty to have in view first, the saving of the life of the patient by early removal of the local trouble (which is a constant menace as long as it exists), and second, the preservation of the limb with as little deformity as possible. In badly damaged tubercular knee joints the surgeon's chief means of attaining the end is excision in the case of the adult; but in children our conservative aim is confronted with a very serious difficulty, for sawing the epiphysis at this time of life is very apt to arrest or at least materially diminish the growth of the limb. With the aid of the spoon, however, we may remove all of the epiphysis except a shell of sound bone; but as this shell reaches to the original level, there is no loss in length of limb, and the hollow will fill with new bone tissue, leaving growth to go on as before. If much scraping is done on both bones, we shall very likely get a stiff limb, but one that will grow. Therefore, in children afflicted with tubercular knee (which must have surgical attention), there are at our disposal for relief but two measures—erasion and amputation. The following, then, becomes an interesting and important question: How far may tubercular disease of the knee progress and yet be amenable to relief by the use of the Volkmann spoon? This presented itself to me when I decided in favor of erasion in the case reported. I desired to see if it were possible, by this means, to permanently stop the progress of disease in a joint that would be almost universally pronounced past relief by any means except amputation.

The success in this case does not, of course, prove that so bad a joint can *always* be cured thus; but it does show that some may be; and a further test may prove that many, equally as bad, can be relieved which would be of great significance to the young who fall heir to this affliction.

There is another point of some moment. It is recommended by some authorities that excision be not done before about the 12th year of age. Neither epiphysis at the knee becomes united to the shaft before the 20th year. If they are sawed before they are thus joined, the limb will be shortened, finally, by the thickness of the two pieces removed plus the amount of growth lost. Therefore, I strongly urge that if it can possibly be avoided by erasion, excision of the knee be not done unless the full stature of the individual be much more nearly attained than it is at the 12th year, say not before the 15th year.

I have made no mention of flexion, because in children this may follow excision. Resection of the hamstring muscles would best be done to prevent it. Whether it be done or not, the knee should be supported by a plaster cast for several months—eight or twelve—and the patient should not bear weight on the limb for that length of time.

ASEPTIC CATHETERISM.

By CARL BECK, M.D., of New York.

Catheterism is the most important procedure in the treatment of the genito-urinary tract. As it has the dignity of a surgical operation, it should be viewed from a strictly surgical standpoint, and should especially be preceded by the same preliminary precautions, at least in principle. These precautions consist in the sterilization of the instruments, the hands of the surgeon and the field of operation.

As far as the first point, the instruments, in this instance the catheter, is concerned, it can safely be maintained that ideal asepsis has become an established fact, because all objects which stand boiling well can be rendered aseptic in boiling water, a means accessible everywhere. There is no more excuse for a surgeon to claim that "the poor circumstances of the patient's surroundings did not permit of aseptic precautions." Water, fire, and boiling-pot can be obtained in the poorest hut, so that not only instruments but also dressing-material, etc., can be sterilized. The hands of the surgeon should be thoroughly cleaned by mechanical means, *viz.*, scrubbing with soap and hot water. The sterile sand-soap mixture, advised by me, can also be used instead of a brush for scrubbing. Attention must be given to the folds and creases of the skin and the subungual spaces. The latter require the use of a nail-cleaner and energetic wiping with the soap. The skin is then dried with a clean towel and rubbed for about one minute with a gauze compress, saturated with fifty per cent. alcohol. The alcohol is used mainly for the purpose of dissolving the fat of the skin which shelters the bacteria; and by dissolving the shelter the bacteria are removed at the same time. Whether washing with bichlorid of mercury is needed after these procedures is open to discussion; it will certainly not do any harm. With reference to the third point, the field of operation, we may safely say that if particular attention has been given to the balanopreputial space, that hot-bed of different bacterial species, especially the bacterium coli commune, the introduction of bacteria *into* the urethra is surely prevented, provided the instruments and hands of the surgeon were sterilized as described above. The analogue to the balanopreputial space in man is the vulva in woman.

The great stumbling block, however, of thorough asepsis is represented by the fact that even the normal urethra contains numerous bacterial species, some of which unfortunately are pathogenic. Melchior found staphylococci as well as streptococci eight times in twelve cases of normal urethras. It is obvious that in a diseased urethra, and whenever catheterism is considered the urethra is generally in a pathologic state, the number, the virulence, and the varieties of bacteria are increased. While it is simply a matter of conscience whether the introduction of bacteria from without is prevented or not, it is utterly impossible to destroy intra-urethral bacteria. It is claimed that by the injection of one or another antiseptic drug with one or another perfect apparatus these bacteria can be destroyed. It is amazing to find such statements made by surgeons who would ridicule a prophylactic disinfecting process, attempted on the outer surface of the body, which would simply consist in irrigating the field of operation with a mild antiseptic. The modern surgeon is contented only after scrubbing with soap and water and subsequent application of alcohol and bichlorid of mercury or a similar antiseptic. And even then there is another surreptitious enemy of asepsis, intracutaneous bacteria, which should not be underrated. These cannot be reached by any disinfecting process. They are set free as soon as there is an injury of the integument, and it is only by protecting the skin margins of the wound with sterile compressers, after the skin is dissected, that they can be kept in check.

No precaution of this kind, however, can be taken in the urethra, which, morever, is a much more congenial resting place for bacteria than the skin surface of the body. In the first place scrubbing with soap and water and wiping with alcohol and bichlorid of mercury or similar procedures are out of question, and as far as antiseptic drugs are concerned, we can only resort to the mildest, since strong solutions would not be borne by the mucous membrane of the urethra. So it can hardly be expected that by simple irrigation of a mild antiseptic, the intraurethral bacteria can be destroyed. And if there is an injury, be it caused by a cutting instrument or by the friction of a catheter, not only bacteria of the intra-urethal surface, but also those sheltered by the follicles have a good opportunity to infect the adjacent tissues. This finds its simple clinical illustration in the fact that whenever blood shows after catheterization there will be a chill, the injuring instrument having opened an avenue for infection. So we see that thorough prophylactic disinfection of the urethra is still a pious wish. This, however, should not encourage any sins of omission. There are surely several points the observation of which will lessen the chances of infection. In the first place irrigation of the surface of the mucous membrane of the urethra will remove a certain number of bacteria. A much more important point is to avoid even the slightest injury while introducing a catheter. Any slight amount of friction may cause an abrasion and thereby open a way for infection. Force must therefore never be used during catheterism. The instrument always tells distinctly how far the surgeon may go, but it is necessary that its language be understood by the surgeon. Bearing in mind the fact that the bacteria in the lacunæ and follicles are set free by dissection, extensive intro-urethral operation should be omitted whenever other means can be found to obtain the desired effect.

A third point is that, being unable to rely upon our usual aseptic methods, we should resort to those antiseptic principles which are applicable to the urethra. In other words, as our active antiseptic drugs, like bichlorid of mercury, etc., cannot display their valuable properties as fully in the urethra, we would better rely on a passive bacterial destroyer, like iodoform, which, while powerless where there is no injury, displays its unequaled properties in the presence of a lesion. Therefore I advocate the prophylactic injection of a five per cent. emulsion of iodoform in glycerine before the introduction of an instrument in the urethra. If an abrasion is caused, the iodoform will come in contact with the wound at the very moment it is made, and with the wound-serum at its *stadium nascendi*. Iodin is set free, and during this chemical process bacteria are destroyed or their development at least is arrested.

Thus we see there are three most important virtues required in catheterism: Thorough cleanliness, extreme delicacy, and much patience. The same principles should be upheld if the patients are instructed to catheterize themselves. From a scientific standpoint, the trusting of such a surgical procedure to a layman is to be deplored, and such risky commissions should be resorted to only under the most pressing circumstances. Soft catheters should be chosen, and the fact that their usefulness is soon destroyed by repeated boiling should not be allowed to carry much weight in such a serious consideration.—*The Medical News*.

FLOATING KIDNEY MISTAKEN FOR AN APPENDICITIS AND OVARIAN TUMOR—OPERATION AND RECOVERY.

By H. T. MILLER, M.D.,
Surgeon to Mitchell-Thomas Hospital, Springfield, Ohio.

In a recent issue of the *Medical Record* there was reported a case of "nephrorrhaphy and stripping of the appendix through lumbar incision for floating kidney, and painful appendix." Though the case I am about to relate is not a parallel one, yet it suggests the possibility of mistaking a right floating kidney for an appendicitis, or, in a woman, for an ovarian tumor.

Mrs. R——, aged forty-four years, occupation domestic, entered the hospital on March 29, 1899, suffering from pain in the right iliac fossa, about one inch below McBurney's point. This pain had commenced about one year previous to the above date, and had continued up to the time of operation. During this period an enlargement made its appearance in the right iliac region. A few days previous to the operation an examination could not determine anything distinctly characteristic in the outlines of this tumor to prompt an absolutely positive diagnosis, nor did the subjective examination determine anything further than that the patient was incapacitated for about a year by almost constant suffering from pain in the right iliac fossa. At infrequent intervals there was a slight rise of temperature.

The outlines of this tumor were not at all distinct, and because of its location it could easily be mistaken for either an appendicitis or an ovarian tumor; then, moreover, the subjective examination could not determine whether the enlargement had appeared gradually or suddenly, whether it was preceded or followed by pain, or whether the fever was short or long in duration; in fact, the history of the case was *nil*. However, the opinion seemed to favor the possibility of the tumor being ovarian, so it was not a little of a surprise when, upon exploration by median incision, a right floating kidney was discovered.

In order to complete the history of the case, I would add that the median incision was at once closed, and a lumbar incision was made, commencing at the twelfth rib to the crest of the ilium. In order to get hold of the kidney and bring it to the margin of the incision, a pair of vulsellum forceps was used, and the organ was secured to the posterior abdominal wall by three large-sized interrupted catgut sutures, no drainage being used. The patient left the hospital on the sixth of May following, cured.

A recent examination showed the kidney still securely anchored.—*Medical Record.*

THIRTY-TWO CASES OF TYPHOID FEVER WITHOUT A DEATH.

By J. C. CRIST, M.D., Lexington, Mo.

The subject of typhoid fever is one in which every practising physician is more or less interested, as well as one that has been thrashed over until it would seem that there remained nothing new to be said, every practitioner having his own peculiar way of treating, feeding, and nursing his patients.

There appeared in the New York *Medical Journal*, of August 12, 1899, an article giving histories of forty-three cases of typhoid fever without a death, reported by Dr. Edward C. Seufert, of the University of Illinois, which induces me to report my thirty-two cases without a death. My experience leads me to indorse the author's treatment throughout, with a very few exceptions, and to assert that if this method of treatment is rigidly adhered to we shall have no delirium, no distended abdomen, no hæmorrhage, and, best of all, shall reduce the mortality.

Most physicians lay a great deal of stress on nursing and diet as well as frequent bathing in typhoid fever, in which I fully concur, but would add with just as much emphasis the necessity of proper medication, believing that some have overlooked drugs and rely too much on diet and the bath, which, of course, should not be neglected, neither should they be relied upon too implicitly.

My thirty-two cases have ranged from three to eight weeks in duration, four weeks being about the average fever period, then following a period of convalescence lasting two or three weeks. Treatment consists of rest, hydrotherapy, diet, and medication.

As soon as I have satisfied myself that the case is one of typhoid fever I instruct the patient to take a thorough bath and go to bed. The temperature of the bath should be that which is most agreeable to the patient. These baths are continued daily throughout the course of treatment, followed by changing bed clothing and gown after each evening bath. As the patient usually sleeps better after bathing I prefer the bath at the usual bed hour. If the temperature gets high (say above 103° F.) and the patient is nervous or restless, I have administered a cold bath; however, if, in spite of the high temperature the patient is resting quietly, the extra bathing is not allowed, even if the temperature reaches

104°. I am well aware that this does not meet the modern idea of hydrotherapy, but if the fever is having no unusual bad effect on the patient why molest him? One good bath daily, with change of clothing, is sufficient for sanitary purposes as well as the comfort of the patient.

Diet.—Milk, boiled milk, milk with limewater, two to four ounces every two or three hours, with all the water the patient can drink. If milk disagrees, soft-boiled eggs, meat broths and soups are to be given.

Medication.—If the patient is an adult, five grains of carbonate of guaiacol are administered every six hours, which controls diarrhœa, relieves the distended abdomen, and reduces fever. We can not give any fixed medication for every case, but this is the treatment usually adhered to. Sometimes the dose must be diminished or omitted, but the patient is not allowed to go longer than twelve hours without guaiacol. If the patient is not able to sleep, a dose of fifteen grains of sulphonal is administered at bedtime. I have rarely had to administer a heart stimulant—only in one case of my thirty-two, that of a young woman who had a relapse. The pulse reached 180 to the minute. Strychnine sulphate in one-twenty-fifth-grain doses was administered hypodermically every three hours, or when it was considered advisable.

After the patient is convalescent and the fever is subsiding, the night dose of guaiacol is omitted or reduced, as it will lower temperature, and it may bring it below normal, a condition I have encountered, and with alarming symptoms, on more than one occasion. We do not have a great number of cases of typhoid fever in this vicinity. My thirty-two cases have extended over a period of about five years, and my experience with carbonated guaiacol in typhoid fever has been as satisfactory as the use of quinine in malarial fever. It is one of the best intestinal antiseptics, being tasteless, is easy to administer, and never disagrees with the stomach. A great deal could be said of it on this subject as well as the effect it may have on the disease after it enters the circulation.

THE TREATMENT OF HEADACHE.

Brunton (*British Medical Journal,* November 4, 1890) states that the first method of treatment in headaches is to try to supply the brain with healthy blood, to clear away any toxins that may be present in it, and one method of doing this is by the administration of a blue pill and a black draught. But more than this, we may try to give something which may have the power of counteracting these toxins, or of producing elimination from the liver; and he has found that the easiest way of accomplishing this is by giving salicylic acid or sodium salicylate; so that in persons who are liable to headaches he generally prescribes sodium salicylate, fifteen, twenty, or thirty grains, at night, with ten to thirty grains of potassium bromide. This mixture acts better than either sodium salicylate of potassium bromide alone, and will usually prevent the occurrence of a headache in the morning. If, however, the headache should still come on, he repeats the dose, and when the headaches are very violent and recurring he prescribes the salicylate, not merely morning and evening, but three times a day, before or after meals. For counteracting the depression excited by the salicylate he gives along with the latter half a drachm of aromatic spirit of ammonia. When the salicylate is long continued it may induce anemia, and to prevent this iron may be given in combination. There is another large class of drugs—antipyrin, phenacetin, acetanilid—which relieves headache by acting upon the conducting fibers or cells in the cord, and tend to disperse pain; these ought always to be given before the headache becomes too severe, because when it is severe absorption from the stomach appears to be arrested. Another drug very much used, and which apparently acts more on the posterior columns than the central columns of the cord, is caffeine. In some cases where there is a continued pain in the head lasting for a length of time cannabis indica seems to help, and this may be given either in the form of the extract or tincture. Ten minims of the latter may be given three times a day, and the dose gradually increased. For headache occurring through inflammation of the periosteum from gouty, rheumatic, or syphilitic irritation, iodide of potassium is very useful. It should be begun in small doses, and gradually increased up to ten, twenty, or thirty grains three times a day. When the pain is associated with some change in the vessels of a similar nature, the iodide may be combined with bromide and salicylate, and in such cases it is advisable to give some aromatic spirit of ammonia in addition.

THE UNWARRANTED USE OF IODOFORM.

One of the most inexplicable things in the practice of surgery is the persistence with which the average practitioner, and even men making some pretense to the title of surgeon, misuse iodoform.

As a powder it is not ordinarily aseptic, and can only by special effort be made so. It therefore may be a source of infection.

It is not absorbent, and can serve no useful purpose in disposing of discharges. On the contrary, it forms with the discharges an impermeable crust which prevents efficient drainage.

It has no antiseptic powers, except as decomposed by granulation tissue, hence is useless as an antiseptic in recent wounds, the purpose for which it is most commonly employed.

The average individual is capable of being injuriously influenced by iodoform in the quantities in which it is very often used, and many people are so susceptible to its action as to develop dangerous intoxication from what users of the drug would consider as minute quantities.

We have had opportunity during the past few months to observe some desperate cases of dermatitis and intoxication following the use of the drug, and it becomes a matter for consideration from a medico-legal standpoint, should an action for damages growing out of its use in other than tubercular cases arise, upon what grounds could the practitioner excuse himself? None whatever. Faith in its anti-tubercular power seems to be dwindling, and with the advent of our present less toxic agents iodoform should be banished even there.

Why men of observation continue to use iodoform gauze within the abdomen is past finding out. The drainage gauze prepared as described in the January number of the *Recorder* possesses all its advantages—and many more—without its unpleasant toxicity.

Stubenrauch has shown with certainty that iodoform applied in even the smallest quantity to kidney tissue causes extensive fatty degeneration and parenchymatous degeneration of the renal epitheleal cells, while in iodoform intoxication similar extensive parenchymatous degeneration of both kidney and liver occurs.

Fenger notes the recorded cases of fatal iodoform poisoning after nephrectomy—we are cognizant of a number that have never been in print—and cautious against its use in even the smallest quantities, in renal surgery especially.

THE opportunity for investment afforded to the Physician by the Tripler Liquid Air Company is without doubt one of, if not the most promising of the century. That Liquid Air is the ideal motive power there can be no question. It is universally conceded that it is only a matter of time when all Engines, Stationary or Locomotive, will utilize this marvelous energy.

So far as its therapeutic value is concerned, we do not believe that any agency possesses a like number of fruitful possibilities. Liquid Air is being employed by Physicians in both Hospital and private practice throughout the entire country with surprisingly good results in a large variety of cases. Through the Medical Record we learn that Doctor A. Campbell White has used Tripler's Liquid Air with magnificent results in an interesting line of cases at the Vanderbilt Clinic, Columbia College. In recent issues of the Medical Record we find the following statements upon Dr. White's authority:

"It can be said with positiveness that we have nothing at our disposal to-day which will so quickly, thoroughly and with as little pain clear up the edges and stimulate the surface of an ulcer to granulations as Liquid Air does when properly applied."

"I am firmly convinced with the experience already had with its use, that it is a specific in the treatment of Herpes Zoster, Sciatica, and Intercostal and Facial Neuralgia, affording instant and continued relief after one application."

"Several cases of Cancer have been treated with Liquid Air during the past year in and about New York, the result has been glowing accounts of the positive cures which have followed its use in this class of cases. An Abscess, Boil or Carbuncle, in the early stage, is aborted with one thorough freezing."

It is the purpose of the Tripler Liquid Air Company to form an association composed of physicians of high standing, who shall aid in the direction and operation of plants to be established in the principal cities throughout the country.

The Tripler Liquid Air Company desire the affiliation of the Medical profession in this substantial enterprise, for the reason that the physician is obviously better able to comprehend the commercial importance of this agency than the ordinary individual.

It is surprising to note the fact that the Tripler Liquid Air Company have already succeeded in supplying Liquid Air for manufacturing purposes at a cost far below that of steam or electricity.

Liquid Air has passed through the experimental stage and faces us to-day as one of our most substantial, useful and promising accomplishments.

Mr. Tripler has thoroughly protected his process of manufacture by patents, consequently there is absolute security afforded to all who take advantage of this excellent opportunity to invest in an enterprise that bids fair to surpass the Standard Oil Company and Bell Telephone Company as a profit-affording enterprise.

The Tripler Liquid Air Company are offering one hundred thousand shares of stock at 50 per cent. of par value, viz.: $5.00 per share.

GAILLARD'S MEDICAL JOURNAL.

A MONTHLY JOURNAL OF MEDICINE AND SURGERY

Scientia et Veritas Sine Timore.

PUBLISHED BY THE NEW YORK MEDICAL PUBLISHING CO.,
106 William Street, NEW YORK.

EDITORIAL.

THE *Medical Age* apprises us of the fact that Professor Schenck, late of the University of Vienna, has announced his intention to establish himself in America, as a specialist in sex regulation. This would seem to indicate that males will be at a discount in this country before many moons. If reports are dependable the talented Professor has had but few calls for girls so far. This is not as it should be; we really need more girls in this country. Men are getting more fastidious every minute and, as a consequence, our stock of feminine genders is very much on the bargain counter order. We extend a cordial welcome to Professor Schenck, and hope that he will be successful in increasing our supply of the beautiful.

"HE who knows not, and knows not that he knows not, is a fool, shun him." That is if you can. We regret to say that we have one in our midst just at this time who positively refuses to be shunned, shaken or silenced. This individual who, by the way, possesses whiskers, a stove pipe hat, and, we believe, a medical diploma, is explaining to the public, through an afternoon daily, why people who smoke cigarettes should not be held accountable for any crime they may commit, especially if that crime be murder, for the reason that he who is addicted to the use of the cigarette is insane.

We might mention in this connection that this same person some time ago announced through the newspapers that he had discovered a new center in the brain. We do not recall whether it was the divorce center or not; whatever it was, he must have lost it, for no one has heard of it since the ink dried on the first reports.

The cigarette has been pronounced by the most eminent members of our profession, both here and abroad, to be the least injurious of all forms of smoking tobacco.

Analyses conducted by competent chemists prove conclusively that the statements made by sensational newspapers that the cigarette contains opium, arsenic, etc., are absolutely without truth.

It is now definitely settled in the minds of all intelligent people that the cigarette is not guilty of either sending people to the grave or the "padded cell."

Of course, a few people who smoke cigarettes go crazy, so do many who go to church go crazy, and sometimes people who marry go crazy. Some are willing to use the weed and take chances, some are willing to attend church and take chances, while others are willing to drift into wedlock and take chances. In neither case have we the slightest objection. But when we happen to know that this "pest" "who knows not that he knows not" is an inveterate smoker of the cheapest brand of cigarettes that the Tobacco Trust will permit, we do object.

All that we want is fair play, and we will take a few chances ourselves, but we must confess that we can't stand a "cold deck," not even when cigarettes are the stake. After all we suppose that the doctor, like the cigarette, will end in smoke, in spite of the notoriety that he enjoys, but to save our lives we cannot see how he succeeded in "working" the editor of the paper, who is a remarkably bright man, for the space used.

AN article written by Dr. Osler, of Johns Hopkins University upon Malaria not long since is severely criticised by one of the editors of a Western medical journal. The critic, (we will call him Dr. Anonymous, for he does not risk his name on this occasion,) evidently has ideas of his own about the treatment of malaria and typhoid fever. In fact, he says that typhoid is cured by no remedy, and seemingly favors "Bishop" Taylor's treatment of malaria.

There is really nothing in his criticism worth considering. It only goes to show that "comparisons are odious."

A WOMAN Christian Scientist has been put in jail for circulating matter pertaining to her creed in Dakota. She is probably persuading herself to believe that a "hold-over" is not a reality but a bit of imagination brought about by "mental dyspepsia." She doubtless spends her time admiring her luxurious surroundings. Verily there is nothing like an elastic imagination.

V. L.

GAILLARD'S MEDICAL JOURNAL.

VOL. LXXII. NEW YORK, MAY, 1900. No. 5

[Written for GAILLARD'S MEDICAL JOURNAL.]

TREATMENT OF INOPERABLE CARCINOMA OF THE BREAST.

By WILLIAM FRANCIS CAMPBELL, M.D., Brooklyn, N. Y.,

Surgeon to Williamsburgh Hospital; Demonstrator of Anatomy, Long Island College Hospital; Assistant Surgeon to Kings County and Long Island College Hospitals.

In a consideration of the treatment of inoperable carcinoma of the breast it will be necessary to define what is meant by inoperable carcinoma in the light of recent pathology. Generally speaking, a carcinoma is inoperable when the pathological conditions exceed the limits of surgical interference. We may regard carcinoma as manifesting itself in three stages.

In the first stage it is a *local* infection and readily removed by the knife. In its second stage it is a local plus regional infection. Here surgical interference is frequently successful providing the surgeon is reasonably well assured that a complete enucleation of the primary and secondary foci is within the scope of his art. When such a thorough dissection would be clearly unjustifiable the case is an inoperable one.

In its third stage a general infection has spread from the primary focus and the internal organs are the seat of metastasis. In such cases radical operation is clearly contraindicated. The radical operation is contraindicated in cases of extreme old age. An operation of such gravity would badly be borne by the devitalized tissues and the advantages to be gained would be insignificant when the expectancy of life is short at the most. It must ever be borne in mind that the virulence of cancer diminishes with the activity of tissue metabolism. It is not unusual for the very old suffering from cancer to die of intercurrent diseases.

If upon careful examination there is discovered the coexistence of other diseases which would in themselves tend to destroy life in a short time we should consider this circumstance a contraindication to radical operative interference.

If after a radical operation has been performed there appear localized recurrences we must not regard these cases as further inoperable, for in strictly localized recurrences some of the best results have been attained in prolongation of life where small nodules have early been detected and removed.

A case is reported where a patient submitted to radical operation of the breast and six months subsequently a small nodule appeared and was excised. Two other nodules appeared at eight and ten months respectively and were likewise excised. The patient lived for twenty-two years after the primary operation. This cause not only would lead us to the repeated excision of recurrent nodules but to the careful and regular examination of all patients having submitted to the radical operation. These patients will often hide such a condition from the family physician. Their safety depends upon frequent examination for the three years subsequent to operation. After the three years' limit a cure can confidently be expected.

Since then we may regard as inoperable those cases of carcinoma which we cannot reasonably expect to cure by operation, is there any palliative operative procedure of value in prolonging life or ameliorating the conditions so that the patient may at least be comfortable?

In 1896 Beatson, of Glasgow, published a remarkable article promulgating the theory that cancer of the breast was due to ovarian irritation and announcing his belief that removal of the ovaries had a marked beneficial effect upon cancer of the breast. To substantiate his claim he presented the case of a woman suffering from undoubted mammary carcinoma upon whom he performed oophorectomy. Eight months after all traces of cancerous disease had disappeared.

Herman in 1899 showed a woman to the Medical Society of London whom he believed was cured of recurrent cancer of the breast by oopherectomy and administration of thyroid extract. The breast had originally been removed by the radical operation in May, '95. In October, '95, there was a recurrence. By July, '98, there was a large ulcerated surface over the right breast and a hard lump in the left breast, with palpable axillary involvement. In July he performed oophorectomy and subsequently administered thyroid extract. By March the ulcer had healed. The lump in left breast and the axillary glands could no longer be felt.

Stanley Boyd presents seven cases subjected to ovariotomy and thyroid extract, and sums them up as follows: Beneficial effect in two cases. Probable in two cases. Absent in three cases.

In view of the foregoing facts, substantiated as they are by careful observers, we must regard henceforth oophorectomy with administration of thyroid extract as one of the palliative operations in the treatment in inoperable mammary carcinoma. It is not for us to explain the theory of this procedure upon any rational basis except the well known physiological relation between the mammary gland and ovulation. However, the extirpation of the ovaries is a simple procedure and under strict antiseptic precautions unattended with danger to patient's life. If such a procedure holds out the least amelioration for a condition upon which we must look with despair it is our plain duty to suggest and urge such an operation as a possible ray of hope.

The question is often asked whether we should remove a carcinomatous breast as a palliative measure. If the surface is ulcerating and thereby inviting a secondary infection which would undoubtedly menace and shorten life, operation is clearly indicated, providing enough skin can be preserved to cover the wound, and thus transform an open into a subcutaneous carcinoma. Where this is not possible and where the necrosed tissues offer an inviting habitat for putrefactive bacteria much temporary benefit will be derived by a thorough curettage of the diseased surface, our aim being simply to scrape off this necrosed tissue and thereby remove the culture medium upon which the bacteria thrives. The curetting may be followed with advantage by Pacquelin's cautery at dull red heat, simply cauterizing the superficial tissues. The procedure of curetting and cauterizing is far more satisfactory than the application of chemical disinfectants and often serviceable in prolonging life.

The use of caustic pastes in these cases is not to be recommended. While it is possible that they may check growth, prevent fetor and lessen discharge, yet their use is attended with great pain, possible sepsis and danger of penetrating the pleural cavity. The trend of scientific thought is against the use of caustics in any style of cancer. We can accomplish the same results with safer and less painful procedures.

The injection of alcohol in cancerous tumors has had some advocates and a sufficient number of creditable cases to warrant its consideration as a palliative measure in mammary carcinoma.

An excellent case well illustrating the method is reported by Yeats in the British Medical Journal, Nov. 13, 1897. His patient was 58 years old, with typical carcinoma of the breast and palpable axillary involvement. The patient declined a radical operation and on Feb. 20 Yeats began the alcohol injection treatment. At the first treatment he injected twenty syringes of twenty each of a solution containing forty parts alcohol and sixty parts water. This procedure he repeated at intervals of five days until May 2. At the end of the fifth week the tumor became œdematous. At the sixth week the growth began to diminish. At the eighth week the whole breast had diminished in size. In May there was nothing left of the mamma to be felt by the hand, nothing of the tumor but the nipple and a trifling thickening. The glands in the axilla could not be detected. There are other cases quite as striking as this where there has been evident benefit from the alcohol injections. This procedure is simple, safe, but painful. As a palliative procedure it merits our consideration.

In the general management of inoperable carcinoma the medical attendant must constantly buoy the patient up by keeping the star of hope ever burning. The patient's despair must be counteracted by the increasing courage and the inexhaustible resources of the physician. He should urge repeated operations. Try every procedure which suggests anything of merit in it. Suitable nursing, appropriate dressings and sufficient anodynes are prime requisites in the management of these cases.

A light and nutritious diet is best suited. The use of stimulants and meat is to be avoided as they increase the rapidity of the growth. We believe there are no drugs which have any power in permanently checking the growth of cancer. However, some have been advocated with fervor; among them we may mention bromide of arsenic, gr. $\frac{1}{40}$-$\frac{1}{10}$ t.i.d. Thyroid extract, protonuclein, calcium carbonate gro. 5-20 t.i.d.

The physician's sheet anchor in this condition is undoubtedly opium. Morphine sulphate hypodermatically is the best and surest method of relieving the suffering of these patients. We may increase the dose as the case demands, being guided entirely by its effects upon the pain. One of my patients took as high as seven grains to a dose.

I have adopted the suggestion of Snow with happy results in a number of cases, viz.: combining cocaine and opium. I believe it is the best combination we can give to inhibit tissue metabolism, sustain the bodily powers and retard growth.

In the management of the local conditions the medical attendant should aim to preserve the cutaneous surface over the tumor intact as long as possible, for by this may be prevented septic infection, always to be feared, as it increases the suffering and shortens life. Means aiding to this end are the avoidance of any pressure over the tumor area and the protection of the surface by suitable cotton dressings permeated with zinc oxide powder.

Should ulceration occur preserve the ulcer surface with the same antiseptic precaution as would be used in operation. Dry dressings will often be found painful and irritating. Wet dressings of saturated solution of acetate of aluminum will invariably be found satisfactory. As a deodorizer peroxide of hydrogen followed by the aluminum acetate dressing will be found satisfactory if changed frequently.

Sometimes an annoying hemorrhage will be occasioned by the ulceration involving one of the larger arterial branches. Gauze steeped in turpentine will prove an efficient.

The heaviest responsibility falls upon the family physician who must most frequently be called upon to manage these trying cases. His fertility of resource will do much in encouraging the patient and prolonging her life. As soon as one means has proved valueless recourse must be had to another. The various palliative measures will be selected as they are adapted to the case in hand. These we must only rely upon until there comes forth from the laboratory the tidings of cancer's certain cure. Until then we must comfort where we cannot cure.

THE USE OF THE FORCEPS.

By DENSLOW LEWIS, M.D., of Chicago,
Professor of Gynecology in the Chicago Polyclinic; Attending Surgeon to the Cook County Hospital, Chicago.

The forceps should be used to deliver a live child that can continue to live, and no other. It should rarely be used on a dead child, for Auvard's cranio-cephaloclast can reduce the bulk of such a child so that it can pass through the parturient canal more easily and with very much less likelihood of injury to the mother.

The Tarnier axis-tractor or Reynolds' axis-traction rods, which convert any ordinary forceps into an axis-tractor, alone apply traction in the proper direction with some approach to scientific accuracy. Of course I will admit that a skilled obstetrician may execute Pajot's maneuver, and with any forceps apply traction to some extent in the right direction. I will also admit that children can be delivered with ordinary forceps, or, after days of suffering on the part of the mother, without forceps of any kind. This admission does not in any way justify such a procedure on the part of any medical man who claims to practice obstetrics in accordance with the spirit of the times.

I have for fifteen years contended that every pregnant woman should be examined at the seventh or eighth month of her pregnancy. The occiput anterior presentation is the only normal presentation, and in case abdominal palpation shows a breech or any other presentation except an occiput anterior, the position of the child should be changed by version, by external manipulation, and Pinard's bandage should be applied. If this were done, forceps delivery would be less frequently indicated.

Unfortunately, in practice, we are often called to obstetric cases where no preliminary examination has been thought of. We find that the woman has been in labor for some time, and no advance has been made. If the head presents, we can sometimes differentiate the fontanelles and recognize the presentation. In many instances the caput succedaneum makes it impossible to distinguish between an anterior and posterior presentation, and if we have had experience and are honest we might as well admit it. In cases of this kind, we seek to know if there is any flattening; that is, any contraction of the antero-posterior diameter of the pelvis. If the finger cannot touch the promontory of the sacrum when a vaginal examination is made, it is safe to assume that no serious diminution in the caliber of the antero-posterior diameter exists. If a marked contraction is recognized, it is folly to think of forceps delivery. Cæsarean section is indicated, and should be performed at once before the woman is exhausted. The statistics of Ohlshausen and Leopold show about eight per cent. of deaths. To-day every practitioner should be qualified to do a hysterotomy; and if he is not, the woman's chances are better if he attempts it than if he tries to deliver with forceps when such a delivery is impossible.

If there seems to be no flattening of the pelvis, we will put on the Tarnier forceps tentatively, and exert traction gently and gradually. Remember, I am speaking of cases where we really do not know if the occiput is anterior or posterior. I have met with such cases, and I am not ashamed to admit it. When labor has been in progress for hours or for days, and a large caput succedaneum has formed, I defy any man to diagnose the presentation. He knows the head presents; he knows he cannot feel the promontory of the sacrum; that is all he knows, and he puts on the proper forceps in a proper way, and exerts traction in a proper direction.

He succeeds or he fails. If he fails, he understands that there is a relative disproportion between the size of the child's head and the diameter of the pelvic brim. Perhaps there is a hydrocephalus or some monstrosity. If delivery is not readily effected, and especially if we are convinced that the child is dead, we must not persist in our efforts; for we know, from our study of mechanics, that a body of a certain circumference cannot pass through an orifice of a lesser circumference. We must not expose the mother to unusual traumatism if the chances are the child is dead. We must know when to stop.

When the head rests on the perineum, I use a short forceps—Jenks', for example—which is held with the right hand, the thumb uppermost. Traction here is applied upwards, and the advance of the head is regulated by the forceps, so that rupture of the perineum may be avoided, and, when thorough dilatation has occurred, the perineum may be slipped over the head between the pains.

Forceps may sometimes be used in breech presentations, especially when the breech is well engaged or impacted. The blades should be applied to the sides of the thighs, and when the hips are transverse an attempt at rotation should be made by the hand. I have also applied forceps to the after-coming head with a good result when the usual manual methods of extraction had failed. The child's body, wrapped in a towel; is held up out of the way by the nurse. Traction is made downward until the pelvic floor is reached, and then outwards and upwards.

An important danger of forceps delivery must not be overlooked. I refer to the increased liability of infection. In normal obstetric cases, where one antiseptic douche has been given before labor, and examinations are infrequent and made with an aseptic finger, there is no need of douches after labor. It is to be remembered that even an antiseptic douche may cause extension of infection, and it must be admitted that if the parturient canal is aseptic, it is folly to try to make it more so. In normal cases, an occlusion pad of sterilized gauze and absorbent cotton is the only necessary dressing.

In forceps cases there is always more than the usual traumatism. Very frequently there is a laceration of the pelvic aponeurosis and the fibers of the levator ani muscle. This is not always accompanied by a laceration of the skin surface of the perineum, and for that reason it is often overlooked. In every case where the forceps has been used, it is the part of wisdom to insert vaginal retractors and to inspect carefully the vaginal walls. Posterior lacerations will usually be found, and in my judgment they should be repaired immediately by sutures passed within the vagina. By this procedure, open mouths of blood vessels and lymphatics are closed, and these unusual and additional doors of entrance for pathogenic bacteria cease to be a menace to the well-being of the patient. Moreover, the immediate repair of the pelvic aponeurosis and the torn fibers of the levator ani muscle prevents subsequent retraction of these tissues and all the ills incident to the development of a rectocele and cystocele.—*Interstate Medical Journal.*

OPHTHALMIA NEONATORUM.

By J. A. DAY, M.D., Winchester, Ill.

The subject of this paper—ophthalmia in the newly-born—like many other important topics, has, apparently, already been worn threadbare by being repeatedly discussed in medical societies, but it is always appropriate to rehearse it, nevertheless; it is of paramount interest to us as physicians, and therefore deserves to receive our most careful and serious consideration. Frequent reiteration, therefore, even if no new ideas are advanced, will serve to more thoroughly impress upon our minds the extreme importance of great care in dealing with this class of cases, particularly as regards their prophylaxis. Especially should the general practitioner and accoucheur be convinced of the gravity of such cases, and understand perfectly the preventive as well as subsequent treatment, as it is in their domain that the majority of cases originate. They should observe the strictest caution in the management of all of their obstetrical cases so as to prevent infection of the conjunctiva of the infant during or after birth.

Indeed, it would be difficult to overestimate the seriousness of this disease, as without doubt it is one of the most fruitful sources of unwarranted and unjustifiable sorrow and suffering with which the human family has to contend. The great proportion of blind eyes in adults as a result of this disease is appalling—the best statistics show that from 26 to 30 per cent. of cases were caused from purulent ophthalmia occurring shortly after birth. Taking it, then, from a humanitarian standpoint, to say nothing of the evident loss and unnecessary cost to our commonwealth, and considering the fact that this is one of the few diseases which it is possible for the physician to absolutely prevent, and in time almost eradicate, where is there a disease in our entire medical catalogue that should elicit more profound study from the medical profession than this one? However, with all these startling facts staring them in the face, it is shocking to notice how very careless, even in this age of boasted scientific midwifery, some physicians are regarding the health of the eyes of the new-born infant. There is no excuse to be offered for those who overlook this particular part of their duty, and they are just as culpable for neglecting to do what they know should be done as they would be for being ignorant of what is required of them as guardians at the parturient bedside.

Too often the physician considers his responsibility ended when the labor is terminated and he has performed the few customary duties relating to the comfort of the mother, and forgets that her child should come in for an equal share of his attention.

Usually, as soon as the new baby makes its entrance into the world, it is handed over to whoever happens to be acting in the capacity of nurse (unfortunately quite often a very incompetent person) and frequently, unless the doctor's attention is called to it, he never as much as gives it a passing thought thereafter. The helpless little innocent is left to the mercy of such a nurse, and is obliged to run the gauntlet of all sorts of "grannie notions," and it is almost a miracle when it escapes uninjured. It gets its first bath according to the method customary with our grandmothers; beginning with the lower extremities and finishing up with the head, the eyes receiving attention last by being wiped out with the same filthy cloth that was used throughout the whole performance. It is plain to see how such a process alone could easily contaminate the conjunctiva with whatever infectious material may have come in contact with the body of the child during its passage through the parturient canal, and common sense, if nothing else, should rebel against such an uncleanly method.

The proper course for the obstetrician to pursue, in order to prevent this disease, would be as follows: As soon as the babe is born, if circumstances will permit it, the parts adjacent to and the eyes themselves should be thoroughly cleansed with warm water; this done the child should be laid aside during the few moments which are required to attend to the mother's after treatment in a suitable place where it can rest undisturbed. It is sometimes impossible for the physician to give his attention to the eyes of the babe immediately after the exit of the head, as is advised by some eminent authorities, owing to a greater demand for his services on the part of the mother at that very moment. This being the case, of course, it would be necessary to omit the additional precaution of immediate attention to the eyes upon expulsion of the head. As soon as practical, though, the eyes should be attended to, by cleansing them thoroughly and then instilling a few drops of some mild antiseptic, such as a saturated solution of boracic acid. The physician should then stand guard, as it were, and superintend the washing and dressing, being particular to see that the eyes are not molested, unless possibly the nurse is reliable and trustworthy, having had a course of training sufficient to cause her to realize the importance of careful antisepsis and the dangers attending infection of the infant's eyes.

If there is the least suspicion of gonorrhea in the parents, or if there is present at the time of delivery any profuse discharge from the vagina of the mother, it would be well to drop a few drops of a 2 per cent. solution of nitrate of silver into the eyes, according to Credé's method. Prof. Credé advised this plan in all cases, but such a radical procedure seems cruel and uncalled for in private practice, at least where there is no special indication for such extreme precautions. Such a plan would probably be appropriate and admissible among the poorer classes in large cities, or in maternity hospitals, where the liability to disease of this nature predominates, but to make it a universal rule would (with all respect to this eminent teacher) be unnecessary, to say the least, in private practice among the better classes; moreover, it would cause inflammation in many eyes which would otherwise have been healthy. The physician must not ignore the fact, however, that it is always possible for parents, no matter how high their station in life may be, to be victims of venereal disease, and he must be on the alert to detect it, and then adopt proper measures to prevent it being communicated in child-bearing. These cases that occur among the well-to-do are the ones that usually catch the physician off his guard, as it is the unexpected that so frequently happens.

It is hardly necessary to irrigate the vagina in all cases just prior to delivery, and if we accept the theory advanced by Döderlein, that there is a bacillus indigenous to the normal vaginal secretion which produces an acid environment which is germicidal in its action, and capable of destroying staphylococci, irrigations of the normal vagina would be contraindicated. In all cases where there is evidence of recent gonorrheal infection or severe leucorrhea in the mother irrigation is invariably demanded and should be strictly enforced. This greatly lessens the risk of the eyes becoming infected during the passage through the vaginal canal, and obviates to some extent the possibility of the virus being introduced by the examiner's fingers. Free irrigation for several days prior to, and occasionally during delivery, with corrosive chloride, 1 to 5,000, carbolic acid or creolin 2 to 5 per cent., or some such antiseptic, will in the majority of cases suffice to eliminate, to a great extent, the possibility of infection of conjunctiva. Care must be taken not to use very strong solutions for irrigating during the labor, as the severest possible inflammation of the eyes, producing total blindness, has resulted from the injection of strong sublimate solution into the vagina at this time (Hirst).

Nature herself incidentally provides a most beneficent means of protecting the eyes under bad conditions, by flushing the vagina with the amniotic fluid, thus throwing out a protective and antiseptic which comes in contact with the walls of vagina just at a most important time. This probably accounts for so many eyes escaping injury under unhealthy conditions where otherwise infection would have been inevitable.

When infection does occur it is probably in the following manner: the face in its descent through the canal is so strongly embraced by the diseased mucous membrane of the vagina during the violent expulsive effort attending labor that the infectious material is forcibly squeezed into the eyes. More especially is this liable to occur during extension of the head when sweeping over the perineum.

Quite frequently, though, the infectious material is introduced some hours after birth, having escaped it during its passage through the canal. This may come about from using infected cloths for bathing purposes, or from the unclean hands of the nurse.

Every case of inflamed eyes in the newborn, even where there is no evidence of impurity on the part of the parents, and notwithstanding the fact that strict preventive measures have been observed, should engage the attending physician's careful attention and should be diligently treated. He should not ignore it, no matter how simple it may appear, or be misled by such statements from the nurses as "it has taken cold in its eyes," or "it has been exposed to too strong a light," but he must begin at once with energetic treatment to relieve it.

What is most unfortunate about these cases is that they are frequently neglected until the disease has advanced so far as to permanently injure the vision before they receive proper treatment. Frequently they are overlooked by the family physician, and not until they have gained such headway as to cause the friends to be alarmed does he give the inflamed eyes much attention; probably, even then, he will delay yet a few days while using some inert collyrium, not being sufficiently impressed with the seriousness of the case and the dangers of delaying. When he does come to his senses and decides to make a good examination he is astonished to find that the damage to the eyes is already so great as to be almost past doing anything for. It is plain to be seen, therefore, why the family doctor, above all others, should have a thorough knowledge of this disease; he must have a clear perception of what to do, and realize the urgent demand for doing it at once, as he is always the first to be consulted regarding it. The eye specialist, to be sure, would be the proper person to treat these cases, and probably it would always be proper to refer them to him, but the difficulty is he is not taking charge of confinement cases, and consequently is of no service at the very time when he would be most needed. For this reason every physician that practices midwifery should understand the treatment of this disease. In fact, the treatment of ophthalmia neonatorum should be included as an important part of the regular course of obstetrics in our medical colleges, and the lecturer would do well to devote several hours each term to its pathology and treatment in order to particularly emphasize its importance.

Such a plan of teaching, of course, would not make the obstetrician capable of treating this disease as well as one who has devoted his attention to eye diseases alone, but it would cause him to realize the necessity of the prophylactic treatment, and this he can carry out as well, if not better, than the ophthalmic surgeon himself. It would also enable him to make a diagnosis early in the case, when he could refer the case to the specialist before the disease has progressed so far as to be past relieving. It is difficult enough to control the intense inflammatory process when taken in its very incipiency, to say nothing of its stubbornness after it has continued for several days. As a rule, when these cases do fall into the hands of the specialist irreparable damage has already occurred to the cornea, and all he can do is to relieve the suffering and give the patient only imperfect vision. To say the least, he finds the eyes in a most deplorable condition; the lids intensely swollen and overlapping, and exuding great quantities of thick creamy pus from their intensely inflamed conjunctiva. On separating the lids the pus gushes out with a spurt in great quantities, and the cornea is found, as it were, imbedded in a pool of pus, owing to the swollen conjunctiva mounting up around its base (chemosis). If the case has continued for several days the cornea will present a scalded appearance, and may be undergoing destructive ulceration, caused from its nourishment being cut off from strangulation of the episcleral and ocular conjunctival vessels, due to pressure from spasm of lids and pent-up discharges.

But few contend now that all cases of ophthalmia neonatorum are caused by the gonococcus of Neisser, as a careful microscopical examination of the discharges in a large number of cases has failed to reveal it. Any pathological discharge from the vagina has the power of setting up a purulent conjunctivitis, and the conjunctiva of the infant is said to be especially susceptible to such infection.

The treatment of this disease depends on the stage at which it is first seen. The physician must consult his own judgment regarding what is the best plan to pursue in each individual case, and not attempt to treat them all by one stereotyped plan. There are a few essential points regarding the treatment which will bear repeating. The most important point, after all, in the successful treatment of ophthalmia neonatorum, is the early detection of the beginning inflammation. The attending physician should himself inspect the eyes daily, and as soon as he notices the slightest manifestation of inflammation should begin active treatment to abort it. If the case is seen early mild antiseptic and astringent treatment will usually suffice to bring about a cure, but should the disease persist, and the purulent secretion become very profuse, stronger treatment will be required. Usually after the discharge has become free a solution of nitrate of silver, 3 to 10 grains to the ounce, applied to the lids once daily, with frequent irrigation with saturated solution of boracic acid or mild solutions of corrosive chloride or permanganate of potassium will bring about improvement. The cardinal principle in the treatment is to keep the eyes free from the irritating discharges which so frequently lead to perforation of the cornea by frequently repeated irrigations and astringent applications. It is this decomposed, pent-up pus that macerates the cornea and causes it to be prone to ulceration. Constant and free use of some mild antiseptic wash, therefore, is indicated. At the beginning it would be best to thoroughly wash out the eyes as often as every half hour, and as improvement takes place the time between the washings can be prolonged. The eyes should be covered between times with small pledgets of absorbent cotton which have been allowed to remain on a cake of ice till thoroughly cooled; these should be changed quite frequently also. This plan of applying cold to the eyes, as a rule, seems to serve a good purpose in helping to reduce the inflammation during the active stage. Occasionally, though, hot applications are indicated, especially where the cornea is severely involved. In making the examination great care should be taken not to damage the cornea by exerting undue pressure. Incautious and forcible manipulations while examining a struggling infant's eyes will frequently do more harm than the treatment can do good. The best plan is to allow the infant's head to rest between the knees of the examiner and its hips in the lap of the nurse, both being seated facing one another. In this way the infant can be easily controlled, and the treatment can be applied more readily. If the lids cannot be separated without exerting undue force it would be well to administer chloroform sufficient to cause relaxation. Lid retractors are apt to do injury and should be avoided. The edges of the lids should be soaked well with warm water, or warm boric solution, and at the same time the lashes should be rubbed gently with saturated absorbent cotton; this unglues the cemented lids and permits the imprisoned pus to escape. The lids should now be forced gently open with the thumb and forefinger of the left hand, the thumb being used for the upper and the forefinger for the lower lid; this allows of free use of the right hand while cleansing the eye and applying the treatment. An ordinary medicine dropper or soft rubber ear syringe is filled with warm antiseptic solution and injected under the lids from the outer canthus, taking care not to injure the cornea with the point of the instrument. This is repeated time and again until the eyes are entirely cleansed of the secretion. Nitrate of silver of suitable strength, depending upon the stage of the disease, is then applied to the conjunctiva with a toothpick, wrapped at the end with absorbent cotton, or a small camel's hair brush; or if the lids are too stiff and swollen to be turned it can be dropped in with a medicine dropper. After a moment the silver can be neutralized with warm salt solution.

If the cornea shows signs of perforation it would be well to install atropia or eserine, depending upon the location of the impending perforation; this will keep the iris from becoming entangled in the wound should perforation occur, and it has a good anodyne effect also.

A vast number of remedies have been advised for ophthalmia neonatorum, but the consensus of opinion seems to be partial to nitrate of silver as the most reliable remedy in the treatment of this disease. Protargol has been highly extolled, and is thought by some to be superior to nitrate of silver. It remains to be demonstrated, though, if there is any remedy that can fill all of the offices that nitrate of silver does in this and similar diseases.

The general condition of the infant must be looked after, as this disease has a tendency to greatly debilitate the system. It should have an abundance of good healthy nourishment from a healthy breast, and instead of imprisoning it in a dark, close room, as is commonly done among the laity, it should have plenty of good fresh air, and, if possible, occasional sunshine, the eyes being protected from the strong light by light antiseptic dressing.

The nurses must be warned regarding the contagious nature of the disease, and instructed to destroy all pieces of cotton, cloths, etc., which were used in applying the treatment and dressing the eyes. They must also be on their guard and not infect their own eyes; this can be avoided by wearing glasses while cleansing the eyes and taking care to wash their hands in bichloride solution after each treatment. Those attending the eyes of the infant must be impressed with the fact that upon their faithful and untiring performance of duty, in the way of diligently treating the eyes, depends the successful termination of the disease.—*Pediatrics.*

THE USE OF THE NAUHEIM BATH IN CARDIAC DISEASE.*

By F. R. HENRY, M.D., Philadelphia, Pa.

Here is a girl who has been suffering from anemia, in whose blood we found a large number of eosinophiles. At present her blood-count is normal, but there is still a rather high proportion of eosinophiles. The examination made on November 13 showed the red blood cells about 4,000,000, the hemoglobin 50 per cent. In the last examination the hemoglobin was found to be 70 per cent., which would be regarded as normal. These instruments of foreign make are too highly colored for us. The blood cells are above normal, being over 5,000,000.

Now what has brought about the wonderful improvement of this girl? I can still hear a murmur, but I doubt if any one not familiar with the case would recognize this as the same heart. The heart is a good deal smaller, the murmur is not so marked. The last measure employed in the treatment of the girl is one we rather hesitated to use in the beginning—that is, she had one of the baths when her heart showed great failure of compensation, and it disagreed with her. But lately she has taken them, and has grown wonderfully better. They are the Nauheim baths, an imitation of the bath obtained at that spring. Dr. Schott at Nauheim originated it, and he has gained a great reputation all over the world for the success with which he has treated heart cases at this spring. Travelers go from a distance to enjoy its advantages, and there is no humbug about it at all. The original water at Nauheim contains an enormous quantity of free carbonic acid gas, a large percentage of sodium chloride (about 2 per cent.), two parts in the thousand of chloride of calcium, and I think about the same amount of carbonate of iron. It has been found that similar results can be obtained from using a bath compounded artificially from these materials and used in your own house. This is a sample of the box containing the materials, labeled the "Triton Bath." There was formerly one objection to this, and that is it was very expensive, being 50 cents a bath. Even to those who are pretty well off a bath costing 50 cents seems much of a luxury. But I am told that there has been a reduction in the price.

This box does not contain the sodium chloride, and in prescribing the bath you had better tell your patient to put the salt in the evening before, so it may be thoroughly dissolved. Be very careful not to put one of these cakes on the bottom of the bath without protecting the tub from the corrosive action of the hydrochloric acid.

The temperature of the bath is a very important thing. It is practically a cool bath, and the temperature is roughly to be from 80° to 94° or 95°, always below the temperature of the body. The average should be about 90°. If you stay in ordinary water of this temperature for ten minutes you will feel chilly, but after a bath of this sort there is no such feeling. The carbonic acid produces a glow, a tingling sensation and feeling of invigoration. Why is it doing good? In those people with

---

*Reported for *The Medical Age*.

cardiac disease the veins are engorged and the arteries comparatively empty. Cool water contracts the vessels of the skin and the blood is forced to seek deeper channels, going especially to the muscles. These vessels dilating, the heart is eased, and when the person comes out the surface vessels also dilate and the viscera are greatly relieved.

In the successive baths there is always a gain in the number of pulse beats, and they gain in volume. The apex will be seen to move toward the center. The appetite improves.

There is another point about this mode of treatment. Dr. Schott encourages his patients to drink water, strange as it may seem. People who have edema we usually put on dry diet, and this seems reasonable; but according to Schott the blood in cardiac disease, from stagnating, has become charged with different matters, especially uric acid, and the water helps this condition. Then he recommends a proteid diet. Many of these cases are of a gouty diathesis, and Schott is one who believes in a proteid diet for such. For my part I think that each of these cases should be studied separately; many cardiac cases have thriven on a diet from which proteid has been practically excluded.

Some of the first men of England have taken up this matter of the baths. Sir William Broadbent and a son of his and Dr. Thorne have written valuable articles on this manner of treatment; and Schott himself has recommended the artificial baths for those who cannot go to the springs.

Another feature of the treatment is the gymnastic exercises given with it—gentle exercises and not complicated. I do not think the elaborate movements so often laid down for gymnastic exercise need necessarily be observed. These movements are exceedingly gentle, and are resisted by the physician or whoever is directing them. That is an important part of the treatment according to Schott and some others. Yet he finds in some cases he cannot make use of the resisted movements and must rely on the baths.

It is a matter on which all practicing physicians should be informed. According to Thorne it casts all treatment by drugs into the shade. I don't agree with that; I don't think anything can take the place of digitalis. In my opinion the baths are rather an adjuvant than a substitute.

In speaking of the symptoms of heart disease, to give you an idea of how pitiable may be the condition of dropsy, I have under my care a young girl whose skin, from the accumulation of fluid, has given way on the lower part of the thigh. There daily pours out from this opening, I suppose, several quarts of fluid. You might ask why I allowed a patient to get into that condition; but she was practically in that condition when I took charge of her.

There is one symptom of heart disease you hear a great deal about. The term I don't approve of, though you hear it a great deal—"cardiac asthma," a pretty term, but untrue. It simply means difficult breathing in a patient with heart disease. There is no asthma about it. Asthma is due to a spasm of the minute bronchioles, and although there is dyspnea the breathing is slow. In "cardiac asthma" there is nothing of the sort, and we have no right to speak of "cardiac asthma" unless we have also the signs and symptoms of asthma. There is another kind of breathing sometimes seen in heart disease—the Cheyne-Stokes—which does not show itself here, but was present in the girl I mentioned. The breathing comes to an absolute stop; I have seen it stop for a minute. You see it in heart disease, in Bright's disease, and in certain brain diseases. Those are the two kinds of dyspnea we see in cardiac disease.

If there is a sudden severe pain in the side you must remember the possibility of embolism. If it is in the lumbar region it may be due to an embolus of the kidney, and if followed by hematuria is almost certainly so. There are cases of embolus of the retina that sometimes baffle us. I was asked last night by a prominent physician to see one of his patients. It was an elderly man who, while waiting for a train, was suddenly seized with blindness, and was brought to Philadelphia by a friend. He could not see a thing. He thought he saw the flash of the ophthalmoscope, and was delighted to think he had so much vision. The doctor could not detect signs of embolus. He had no paralysis in any part of his body. He had a poor heart, with atheroma of the vessels. We came to the conclusion that it was more likely to be a thrombus than an embolus—perhaps in the basilar artery. The indication seemed to be to stimulate the heart, and to-day the man can see a little. We gave him a little alcoholic stimulant; $\frac{1}{10}$ grain digitalin is being given about every five hours, with aromatic spirit of ammonia; and he is also getting iodide of potassium.

In regard to the Nauheim baths I am glad to be able to indorse this method of treatment. It is being carried out in many sanitariums and in private houses in the country. I would not advise any one to use it in aneurism and in cases of genuine angina pectoris.

ENZYMES AND IMMUNITY.*

By CHAS. T. McCLINTOCK, M.D., PH.D., Detroit.

The problems of immunity are the most fundamental of all the problems in curative medicine. We are forever besieged by innumerable hordes of lower organisms which will, if they can, destroy us. Soon or late, alive or dead, they triumph and literally destroy this body of ours. During life and fair health we hold them off, or, as we say, are immune to their attacks. What gives this immunity? On what physical or chemical conditions is it dependent? Why is it present at one age, absent at another? Sufficient for all needs to-day and wholly inadequate another time?

These, I repeat, are the most fundamental, most important of all questions in therapy. Anything like a satisfactory explanation of all the phenomena of immunity is as yet quite impossible. Of this we are sure, instead of being a simple somewhat dependent on some one thing or condition, immunity is a most complex affair. The immunity to smallpox gives not the slightest protection against tuberculosis or cholera. The heel of Achilles is always exposed. Be you ever so strong there is always some disease germ to which you are susceptible.

---

* Read before the Mississippi Valley Medical Association.

In the germ-caused diseases the phenomena are those of a combat, a struggle for existence between two opposing forces. On the one side disease germs, insatiate, at times all but innumerable, eating, devouring, poisoning—a pitiless foe. Opposed are the body tissues, normally well equipped for defense—barrier walls of dead cells, impenetrable membranes—a marvelous ability to repair breaches—a soldiery instantly available—poison and germ-destroying agents, eliminative organs, reserve food, and defensive powers.

As the one or the other of these forces is stronger we have immunity or susceptibility. If the tissues are at the outset susceptible the bacteria grow—and yet it may be recovery takes place. This means that an immunity has been developed—in some way the tissues have gained a power they lacked at first.

We speak of many of the contagious diseases as being self-limited. In a sense this is not true. The bacteria never quit until forced to. Pasteur supposed that their multiplication was stopped on account of the exhaustion of some necessary food. We know that this is not the correct explanation. They cease only when the body is able to destroy them or their products. And if we are to give any essential aid it must be by assisting to develop this immunity.

What are the agents for attack and defense in this struggle we call disease? For several years the opinion has been gaining ground that they are, frequently at least, enzymes, unorganized ferments. Matter as it occurs in living things is soluble or insoluble, liquid or more or less solid, according to the needs of the organism. This change in condition is effected, in so far as we know, solely by enzymes. It is probable that every living cell has to some extent this power, to liquefy, to solidify certain kinds of matter.

We are acquainted with a few of the enzymes, while it is probable that there are many kinds of them. On account of the nature of their food the lower plants must of necessity be strong enzyme-producers. We do find among them those that readily digest cellulose, as manifested in the decay of wood, horn and hair, the stone-like coverings of many seeds and nuts—digestion that is impossible for us. Most of them can rapidly digest proteids and carbohydrates. For some time I have been studying certain of the bacteria with the view of finding a better proteolytic ferment than pepsin or pancreatin. You will recall that the most powerful diastase we have is obtained from one of the lower forms of fungi.

In growing large quantities of diphtheria germs for the production of toxin, we notice occasionally that there is a vigorous growth of the germs; the surface is covered with a scum of them, and on the bottom of the flask there is a thick layer; yet in a day or two they wholly disappear. Examining the flask we find that it is contaminated; there is a foreign germ present, and this has produced a ferment which digests and literally eats up the bodies of the diphtheria germs.

Watching the growth of other germs, in particular the germ of green pus, we note that without any contamination the germs disappear—a case of autodigestion, *i.e.*, the germ produces a ferment, and in turn the ferment digests the germ, just as after death the stomach will digest itself. The failure of the living stomach to digest itself suggests a possible explanation for the difference between pathogenic and non-pathogenic bacteria. The non-pathogenic bacteria produce enzymes which act only on dead protoplasm, whereas the pathogenic product can digest living protoplasm, or, if not, it has the power first to kill, then to digest.

The similarity of many of the phenomena of disease and of disease resistance to enzyme action has been noted by a number of observers. In general, toxins and antitoxins in their behavior to heat, to precipitation, to dialysis, drying, and the like, are much as the enzymes. Note the similarity of the consolidation in pneumonia to the clotting of blood, or to the coagulation of milk by rennin, and the resolution—how like the digestion of proteids.

In a preliminary investigation I find that pepsin, aside from the action of HCl, will kill a number of species of bacteria, but fails on some. I am strongly inclined to believe that the disinfecting power of the stomach is due far more to the ferments present than to the hydrochloric acid. The diastases destroy some bacteria; the neutral ferment, bromelin, some. Loew and Emmerich report that two cubic centimeters of a solution of an enzyme obtained from the bacillus of green pus will kill two and a half million virulent anthrax germs in five minutes. According to these authors this enzyme rapidly destroys large numbers of the germs of typhoid, diphtheria, plague, etc.

That one germ or its products can aid or hinder the work of other germs has long been known, and it has been the dream of many workers that we would ultimately fight disease germs with other germs or their products. It appears as if this dream is about to be fulfilled. To this later.

If we inject large numbers of many of the non-pathogenic bacteria into the veins of a healthy animal, after some hours we are unable to find a trace of them, unless it be that they are of the spore-producing kind. Not only have they been killed, they have disappeared; nor are they in hiding—they are gone, dissolved, digested, if you will. Your patient recovers from peritonitis; for the most part the millions of germs present during the disease are not excreted, although some of them are; the germs are dissolved. In the cold abscess the tubercle germs producing it often all but disappear.

We have an animal that has been artificially immunized to cholera or typhoid. We inject some of the actively motile germs into the abdominal cavity. After a few minutes we kill the animal, and on examining the peritoneal fluid we find that the bacteria have ceased to move; they are swollen and distorted; their cell membrane has been altered so that they stick together. If the exposure has been long enough they are dead. With certain limitations all of the phenomena are produced when a drop or so of the blood-serum is added to cultures in test-tubes. There is a something in the blood and fluids of the animal that quickly affects the germs. These agglutinins, as they have been named, act like enzymes, and are by most observers believed to be such. The Widal test is the most widely known of these phenomena.

Draw a little blood from a calf, then vaccinate the calf. Wait two weeks and again draw some blood. With the blood-serum obtained from the bleedings mix some active vaccine virus. After a bit vaccinate a healthy child on both arms, using one of the samples of vaccine for each arm. It will be found that the vaccine mixed with the serum from the vaccinated calf is inert; that with the serum of the same calf before vaccination is active. Repeat this experiment with blood obtained from horses, hogs, monkeys, or men—the result is always the same. The blood of any of these animals before they are vaccinated has no ill effect on vaccine virus, whereas after vaccination it rapidly kills it. The blood of men and animals who have recovered from smallpox contains this antivirulent substance—the power to kill vaccine. All that we know leads us to believe that recovery from smallpox or vaccination is due to the development of this substance.

We vaccinate a child. The vaccine organism, whatever it may be, multiplies rapidly, the phenomena of the disease appear, but after about a week these anti-bodies begin to appear in the blood. Whether they are produced by the body, by the vaccine organism, or by the two together, we cannot say—but come they do, and in turn kill the vaccine organism, and we say the disease is self-limited. Note the similarity here to what takes place in the flask containing the green pus germs. The germs grow, produce an enzyme, which in turn destroys the germ that produced it. This antivirulent substance found in the blood of the immune to vaccine or smallpox seems to be an enzyme related to the diastases. Compared with the antitoxins it is a very stable body, resisting heat, sunlight, putrefaction, time, to a remarkable degree. It has been demonstrated in the blood of a man who had recovered fifty years before from smallpox.

After looking over the evidence, which is too voluminous to be more than mentioned here, it appears to me to be fairly well proved that the body does destroy disease germs and organisms with enzymes.

But how about toxins? The germ poison? The evidence is not so conclusive, although there are many facts indicating the probable truth of the enzyme explanation.

Grind together some tetanus toxin and portions of the brain or upper cord of a susceptible animal. The mixture soon loses its toxicity, and even becomes slightly antitoxic.

Emmerich and Loew give a number of experiments to show that the green pus enzyme—Pyocyanase, as they call it—not only destroys germs but also their toxin, both in the test-tube and in the body.

Now the more important question. For argument's sake admit that the body does destroy germs and their poisons with enzymes, that the enzymes are the agents of immunity. Can we produce these enzymes outside the body and lend them where there is need? Can we substitute the flask and test-tube for the horse in producing antitoxin? It seems to me to be probable, although not yet proved.

The published results of Emmerich and Loew are very noteworthy. They seem to show that if the green pus enzyme is injected into the body it is quickly destroyed, but if it is first made to unite with blood or with spleen pulp a molecule is produced that can circulate in the body for a time, at least long enough to attack bacteria or their toxins. With such a substance they report curative results in several of the bacterial diseases.

I have gone over a part of their work. My results, however, have had thus far to do with bacteria in test-tubes only.

But whatever the results, I feel sure we are on the right track. We are studying the disease-producing organisms, learning the agents with which they work. Little by little we are learning how the tissues combat these disease-producing agents. When we know these things then will we be ready to give intelligent aid.

THE TREATMENT OF RHEUMATISM, ITS PROPHYLAXIS AND CARDIAC COMPLICATIONS.*

By SIR RICHARD DOUGLAS POWELL, Bart., M.D., F.R.C.P., London,
Physician-in-Ordinary to the Queen; Physician to the Middlesex Hospital and to the Hospital for Consumption and Diseases of the Chest, Brompton.

I must first of all acknowledge the great honor, which I feel it to be to be requested to make some final remarks in conclusion of this discussion and I will mark my sense of that honor by being as brief as I can consistently with due respect to the number of very able and eminent speakers who have preceded me. I think, after hearing the remarks of some speakers at the last meeting and still more after the remarks of most speakers of this meeting, that we may fairly say that the profession are certainly prepared to accept, if not to welcome, the arrival of a microbe as representative of the rheumatic disease provided that it be duly accredited to us by scientific investigation. I am bound to say that although we have been well prepared for the possible advent in some saprophytic form of such an organism by the most elaborate and able Milroy Lectures of Dr. Newsholme to the Royal College of Physicians of London, the points of which have been given to us so carefully by Dr. W. Ewart, yet these arguments, meteorological, bacteriological, epidemical, or clinical, do not, I think, do more than lend color to a preconceived hypothesis, however scientific it may be, of the possible existence of such a microbe. The position most likely occupied by such an organism has been placed near the surface of the soil. It is presumed to dwell in certain localities and even to lurk about certain houses; its avenues of entry have beeen defined as through the tonsil or possibly the air-passages or digestive tract, but beyond these statements with regard to the organism we cannot say that we know anything whatever about it and it has never been demonstrated to us. It does not, however, follow that it may not appear, and that soon. We can have no quarrel with any hypothesis which leads to so practical a therapeutical suggestion as that initiated by Dr. T. J. Maclagan—viz., the introduction of the salicyl compounds in the treatment of rheumatic fever.

---

* The reply to the debate on the Treatment of Rheumatism at the Chelsea Clinical Society delivered on March 20, 1900.

There have been certain organisms discovered in rheumatic fever alluded to by Dr. Ewart—viz., the staphylococci, the streptococci, the pneumococci, and I think a few others—which have been found by certain observers more particularly in those cases in which the rheumatic fever has been associated with tonsilitis, and an interesting paper was read by Dr. P. S. Abraham before the Clinical Society last June in which he speaks of cases of rheumatic fever associated with throat affection. He divided these cases of rheumatic tonsilitis into two forms—faucial erythema, with which we meet as part of the rheumatic illness, and tonsilitis proper, the latter including follicular tonsilitis and ordinary quinsy. Dr. Abraham found these organisms in the secretions and sections of the tonsils, in the blood, in the urine, and I think in the joint fluids. Dr. Abraham's observations are to my mind of great interest, but I venture to doubt whether they really throw much light on the point which he was trying to introduce—viz., the possible result of rheumatism from these causes. Dr. Abraham alluded to eleven cases, all of which were children except one, and from other facts mentioned in the paper I gather that almost all his throat cases were cases of follicular tonsilitis. I am not surprised at these organisms being found in the follicles of the tonsils and in the blood in the case of follicular tonsilitis, for follicular tonsilitis is a disease which is always regarded as one suggestive of at least a mixed infection, and one never sees a case without careful inquiry as to drains and sanitation. It was interesting to me to remember the occasional occurrence—I have only met with two cases—of infective endocarditis as a process arising in the course of primary acute rheumatism, and the fact of finding such organisms in association with acute rheumatism would lead one to see how perilously possible the occurrence of infective endocarditis may be in such cases.

With regard to the blood, however, but little has been said. There is a characteristic sign and a diagnostic sign almost, one might say, of a remarkable increase of fibrin in rheumatic patients only equalled by that found in pneumonia; the red corpuscles are notably decreased and the white corpuscles are increased. The total acidity of the blood is increased, or it is better, perhaps, stated that the total alkalinity of the blood is diminished. This acidity of the blood led many years ago to the lactic acid hypothesis of rheumatic fever which, I think, has been trenchantly criticised by Dr. Pye-Smith as an exploded idea. Whether this increased acidity be the result of some modified local metabolism or of some disordered intestinal secretion leading to the production of some ferment or to the advent of the bacterial ferment, which has been so largely supposed in the present discussion and in the current literature of the day, I am quite unable to say. On these points we must wait with due reserve for the further researches which are sure to be made and the enlightenment which will surely come to us.

It is a curious fact that the nervous system has been almost entirely forgotten in the present discussion and yet some will remember how lively a discussion took place twenty-five years ago as to the origin of rheumatic fever as a neuropathy, in which Dr. T. Buzzard took a very prominent part. When one considers how very closely allied the nervous system and arthritis are one cannot be surprised at such a hypothesis having arisen. We know perfectly well that rheumatic arthritis is almost invariably a disease preceded by some appreciable nervous shock, agitation, or prolonged anxiety, and Charcot's neuro-arthritic cases are well known. Hyperpyrexia in rheumatic fever is almost the only possible way of people dying in this disease except from direct cardiac lesions. Hyperpyrexia is a paralysis of the thermic control centres and is closely associated with the recedence of the proper rheumatic manifestations, although it is found in other diseases as well. Again, chorea is a disease of rheumatic and of nervous manifestation, and I must say that it was ingeniously and attractively disposed of by Dr. A. E. Garrod by saying that it was a sequel of rheumatic fever just as diphtheritic paralysis and such nerve lesions may be sequelæ of diphtheria arising from the specific action of toxins on the nerve centres.

With regard to the prophylaxis of the disease I do not think anything is to be said. Dr. Ewart asked many questions about the prophylaxis of rheumatic fever and he proposed to us a good many conundrums, but he did not answer them so far as I know. If one may criticise Dr. Ewart's paper in a kindly spirit I should agree with Dr. A. E. Sansom's remark that it was a little too arthritic. Arthritis is an essential feature of rheumatism even in children. You rarely meet with a child with "cardiac rheumatism" who has not exhibited pains called by the friends "growing pains" sufficient to hamper the liveliness of the child. The peculiar arthritis in acute rheumatism is a part of the disease, it is as ephemeral as the rose spot of typhoid fever, with which to my mind it is closely analogous, and the duration in each joint is about the same. When it lasts longer in one or more joints one finds that the disease is not a pure disease but a mixed disease, such as gonorrhœal rheumatism or a rheumatism in association with hæmophilia, or possibly complicated by tubercle.

Still greater difficulty have I in regarding rheumatism exclusively from the cardiac side. Dr. D. B. Lees says it is a cardiac disease with arthritic complications. Dr. Lees deserves our gratitude for the clearness with which he puts before us any hypothesis he may have. There is no doubt whatever as to what he means; he briefly and frankly states the whole case from his point of view. With regard to cardiac dilatation in rheumatism, he regards cardiac disease not necessarily as endocarditis, but as a gradual affection leading to the dilatation of the organ, and I think it is an interesting thesis for discussion. I confess that I had not observed this dilatation of the heart as a constant effect in rheumatism. It is possible that I have overlooked it. One examines patients, but looking back no one can say that he has examined all the cases with sufficient accuracy with regard to this one point to be able to exclude it. In anæmic cases, and especially in anæmic young women, who so commonly come into hospital with rheumatic fever, one frequently, of course, observes some cardiac dilatation. One may meet with cardiac dilatation in any febrile condition, and one is accustomed to regard it as attributable to that condition of muscle present in association with high temperatures to which pathologists give the delightful term of "cloudy swelling." I do not know quite what it means, but it is attended with a somewhat less distinct outline of the elements of the muscle and an increased softness of the tissues and is a condition that is very compatible with the possible yielding of the muscle before the blood pressure. Myocarditis we meet with as a cause of the enlargement of the heart, and fatty degeneration is a rare cause of sudden death in rheumatism. But these facts will not at all explain Dr. Lees's findings with regard to the heart in acute rheumatism; there is, so far as I can gather, scarcely any way out but that the heart must be partially paralyzed by some definite poison affecting it, such a poison as Dr. Lees describes as an undue acidity of muscular texture. Then, again, the rapid diminution in the enlargement of the heart under treatment is another point observed by Dr. Lees. Dr. Ewart at a meeting of the Clinical Society of London endeavored to explain these cases by saying that there was some temporary effusion into the pericardium, but Dr. Lees will not admit this; and I can conceive no explanation except that which Dr. Lees expounded, only I think that he would fully expect that his observations would be received with a respectful scrutiny on the part of those to whom it was first presented. As regards the description, the definition of rheumatism, I should much prefer the very accurate definition which was given us by Dr. Archibald Garrod that it is "a systemic disease with arthritic and cardiac manifestations," a definition which is accurate and which is safely within the limits of our knowledge of the actual causes at work in acute rheumatism.

In my second Lumleian Lecture two years ago I ventured to sum up in a sentence the current treatment of acute rheumatism, which has drifted down to us from the experience of many years past. Such patients should be treated by "absolute rest in bed in woolen wrappings, a free relief of the bowels, and the administration of salicylate of soda in efficient doses in combination with such alkaline remedies as the condition of the urine may suggest," and I have been interested to see how far this ordinary routine treatment has been exemplified or departed from by those who have spoken. The object of the treatment is to diminish suffering, to lessen the duration of the disease, and to protect the heart. It is, of course, absolutely unnecessary in an assembly of practical men such as this is to speak of the necessity of keeping rheumatic patients in warm wrappings in a comfortable, well-ventilated room, and of securing a free relief of the intestinal secretions. I do thoroughly approve of the diet of patients being strictly liquid, and mainly milk, for a good many days. Dr. Burney Yeo's remark was a valuable one and one apt to be forgotten in hospital practice, and that is, "Let the patient have a good drink of water if he wants it." One sees in hospital wards the careful manner in which water is given as if it were a potent medicine instead of a soothing drink. With regard to rest in the treatment I feel bound to linger a little, although less to-night as so much has been said. I do think that the profession have not yet fully grasped the exceeding importance of absolute and prolonged rest in the treatment of rheumatic fever, especially, of course, when the heart is involved. The inadequacy of treating the patient by rest has largely affected the statistics of the salicylate treatment. A practitioner will give salicylates to a patient and in two or three days the patient is free from pain and does not see why he should not get up. Determination is required to make him keep at rest. The salicylate treatment relieves the symptoms of the disease and subdues many of its important features, but it does not cure the rheumatic illness, it does not shorten the duration of that illness. You cannot get out of the rheumatic illness under four or six weeks, and if because the patient is relieved of pain he begins to move about he nevertheless is still a patient with latent rheumatic fever and may have a relapse and in all probability a relapse with cardiac complications. With children the slight joint affections often mislead the practitioner and the rheumatism may not be detected, with the consequence that relapses occur with cardiac complications. Dr. R. Caton was very emphatic about the importance of rest in the treatment of rheumatism. I may venture to say that I think a good deal of Dr. Caton's great success in the treatment of rheumatism is due to his having so early recognized the extreme importance of continued long rest throughout the rheumatic illness. Dr. Sibson, who was the first advocate of the rest treatment in rheumatic fever, was curiously inadequate in his directions in regard to it, and his directions were that the patient should be kept quiet in bed "for a period of several days after the complete disappearance of the local inflammation of the joints." The point in the treatment of rheumatism is that so long as the tongue is coated the urine is loaded, and so long as there is a trace, even the slightest trace, of pyrexia people must be kept rigidly in bed in warm clothing and also for a period of a good many days afterwards even in the complete absence of any cardiac affection.

There is one little point in regard to temperature that is important. One so often hears it said that a patient has no fever of any consequence, that the temperature only runs up to about 99° F., or a little below, and you are told he is not feverish. But 99° in the mouth or the axilla is a morbid degree of temperature, and taken in association with the history of recent rheumatism or a slight endocarditis it is an absolute sign of the importance of preserving complete rest. As Dr. Maclagan said, inflammation in the valves of the heart is very slow to subside, and it is not a mere surface inflammation but affects the fibrous texture of the valves, which are ever in function; and when diminished in resisting power by recent inflammation the extra strain upon them of several thousand impulses per day involved by the patient changing from the position of absolute rest to the upright posture, or sitting or moving, is enough to keep up the inflammation and to cause a deforming valvulitis. I remember well Sir William Jenner's memory-clinging words when he used to say in the clinical wards, "Children do not grow out of heart disease, they grow into it." That statement was mainly founded on the treatment of rheumatic fever in our hospitals and especially in children's hospitals where, at that time particularly, rest, complete rest, for a sufficient length of time was not observed. I do not know whether the rest treatment can be observed fully in children's hospitals; the want of it is an explanation to my mind of that statement.

Again, I would venture to say from clinical experience that those two most grave cardiac affections of rheumatic origin, mitral stenosis and aortic regurgitation, are valvular lesions which are scarcely ever met with in primary rheumatic illnesses—they are almost always found in those cases which have left the hospital after a primary attack of acute rheumatism and have returned some months later. These two lesions are the consequences of subsequent slow deforming valvulitis from strain put upon the valves before they have completely recovered from the primary rheumatic lesion. In my experience, and in that of many of those who have spoken to-night, primary endocarditis is a curable disease in a large number of cases if taken in time and if the patient is retained at rest for a sufficient time to allow the valve to make recovery before the extra strain or function is put upon it.

With regard to salicylates, if they do not do all that which was originally claimed for them their usefulness cannot be gainsaid. Those who remember the controversies of some 30 years ago, when the relative values of alkalies, blisters, iron, mint-water, and cotton-wool wrappings were discussed, will agree that there was no very marked advantage in the treatment of the disease by any of them. As already said, it is the universal experience that salicylates do not affect the duration of the rheumatic illness, but they do reduce the temperature and relieve the joint affections. It would be idle to discuss the mode of action of the remedy with which we are after all somewhat imperfectly acquainted which neutralizes, although it does not extirpate, the rheumatic poison, a poison of which we know absolutely nothing. The salicin compounds are certainly remote antiseptics of considerable power. Those who have watched patients taking considerable doses of salicylate will have noticed how long the urine can be left standing exposed to the air without undergoing decomposition. It is said that statistics prove that cardiac complications are more frequent in those who are taking salicylate and that relapses are more to be feared than under the alkaline treatment. I think that Dr. Ewart hit on the fallacy of the inference from these statistics when he remarks upon "the indirect risk that arises that we may be misled into overestimating its anti-rheumatic powers and relax too early both treatment and diet."

It is said again, that salicylates have no influence upon hyperpyrexia in rheumatism. I do not know that any drug has an influence on hyperpyrexia when it is established, but in my experience hyperpyrexia has enormously diminished as a complication of rheumatism since the introduction of the salicylate treatment. Dr. W. E. Wynter has been kind enough to look through the records of the Middlesex Hospital for the last 30 years. In the years from 1870 to 1876—that is, before the period of the salicylate treatment—there were 952 cases of rheumatic fever with 30 deaths, that is to say, there was an average of 136 cases of rheumatic fever every year with an average death-rate of four and a quarter. In this period there were 11 cases of hyperpyrexia, of which one case recovered.

In the remaining 21 years, from 1877 to 1897, all within the period of treatment by salicylate, there were 2,552 cases of rheumatic fever admitted into the hospital with 27 deaths, or an average of 121 cases instead of 136 cases per year, and with a death-rate of one and a half in 121 as against four and a half in 136. In that period there were only six cases of hyperpyrexia, all of which occurred in the first two years and four of which recovered. There has been no death from hyperpyrexia in the hospital since 1889. My impressions have been thus borne out by the hospital records. Then, again, in the treatment of hyperpyrexia I have made it a rule after reducing the temperature by cold to adhere to the salicylate treatment. I think it will be found that where hyperpyrexia occurs in a considerable proportion of the cases the salicylate treatment has not been pushed very vigorously.

Pericarditis is spoken of as a common complication of rheumatic hyperpyrexia. My experience, and I should like to know if it is the experience of others, is to find in high temperature that it is common to hear a pericardial friction sound or a rough murmur at the base of the heart, which is found to disappear when the temperature comes down nearer to the normal range. I have come to regard with great suspicion such adventitious sounds when presented in cases with a temperature above 104° and wait till the temperature is lower, looking upon them as often due to some temporary dryness of pericardial membrane or some changed hæmic state.

There have been various statements as to the unfavorable effects of the drug, some maintaining that these effects are rather imaginative. I must confess that I do not agree with this opinion. I have observed a distinct case of renal hæmorrhage associated with salicylate treatment and I think Dr. Pye-Smith mentioned some cases also. Then, again, the occurrence of great slowness and great feebleness of the pulse is sometimes met with in people taking salicylates, so notably met with as practically to interrupt the treatment by salicylate. Now and again one meets with delirium with a falling temperature coming on in the course of rheumatic fever; that is in my experience always an untoward consequence of salicylate treatment and requires the treatment to be interrupted. With regard to the dosage various opinions have been expressed. I for my part should say that a 15-grain dose is better than a larger dose, but it should be repeated at sufficiently short intervals to get the patient under the influence of the drug. When too large doses are given at first the drug is apt to cause vomiting or other disagreeable symptoms. I fully agree with Dr. C. C. Gibbes that the influence of the drug should be maintained.

The effect of the discussion will be to rehabilitate alkalies in our good graces. The alkaline treatment was tried in its thoroughness many years ago and was found wanting, and although it still lingers as a tradition in some London hospitals, yet it has come to be softened down and to be mingled with the more efficacious salicyl treatment. Alkalies seem to be called for by the symptoms of rheumatic fever, but I should very much question whether they can have much influence upon that acidity which is said to be so potent in producing paralytic cardiac dilatation. For we must remember, at least I think I am right in saying, that the blood is never acid even in acute rheumatism; it may be less alkaline than is normal. As regards the sweat I have never observed the sweat of a patient to be rendered alkaline by the alkaline treatment even in cases where the urine is strongly alkaline. The urine is readily rendered alkaline, but I doubt whether it is of any advantage to make the urine, which is normally acid, alkaline in the course of the treatment of rheumatic fever. I should regard the usefulness of alkalies rather as increasing the oxidation of the tissues and promoting the elimination of morbid materials, whatever they may be, from the blocd and should be inclined to give them in moderate doses.

With two exceptions, Dr. Donald Hood and Dr. Burney Yeo, opium has not been touched upon. It was at one time an important remedy in acute rheumatism. We do not now require to give opium to any great extent—it is useful for the first 24 hours for the relief of pain—but in myocarditis, in grave forms of endocarditis, and especially in pericarditis, the opium treatment is of immense value, its object being to cause organic rest, so far as organic rest can be given to an automatically moving organ, by diminishing the rapidity of the pulse and quieting the restlessness and agitation of the patient.

With regard to blisters very much has been said and I should attach much importance to Dr. Caton's views after 19 consecutive years' observation. The idea of treating the surface nerves which have reference to the inner organs, the area of distribution of which has been so ably pointed out by Dr. H. Head, is an attractive one. The possibility of producing a reflex vaso motory control of the affected valves is a very attractive hypothesis, but I still think it is rather straining physiological therapeutics to the extreme point. An ounce of fact, however, is worth a pound of theory, and Dr. Caton has found the application of small blisters useful in acute rheumatism, and one can only suggest its further trial. We all agree on the little value of digitalis in the acute cardiac affections of rheumatism. The treatment of the more chronic affections of the heart in rheumatism referred to by Dr. Sansom by regulated exercises and by saline baths seems scarcely to come within the range of the discussion. I believe he should agree with me that these therapeutical measures are unsuitable in the treatment of acute or subacute rheumatism with any active trouble in the valves.

I fear my remarks have been discursive, but I would say that for my own part I have derived the greatest possible interest and advantage in carefully watching this debate through and I think it is a discussion which will be of extreme practical help and value. It is a most important function of clinical societies, in my belief, occasionally to bring forward questions of this kind, to be discussed from a large point of view, collating the experience of many observers in order to formulate some efficient and valuable treatment of such diseases which are the more important because they are very common.

MECHANICAL CAUSES OF STERILITY IN WOMEN.*

By R. E. CUTTS, M.D., Minneapolis.

The relative frequency of sterility in male and female is variously estimated, but probably the approximate relationship is one to ten in favor of the male. And while deformities, stenoses and abnormal secretions of the vagina enter into the causes of sterility in the female, yet this percentage is low and usually readily corrected.

It is the pathological conditions existing in and between the cervix and ovary that produce sterility in most cases, and it is to these that I wish to refer in this paper.

While we have the location of the trouble narrowed down to a comparatively short distance, yet it often puzzles the most careful gynæcologist to recognize just at what point this tract is at fault.

At the cervix we find conditions obstructing the passage of spermatozoa, such as hypertrophy (either elongation or thickening), eversions and erosions or abnormal conditions of the cervical canal, viz: pin-hole os, a marked angle in the course of the canal or a valve-like condition at the internal os. With these conditions we almost always have a catarrhal endocervicitis, which produces a thick secretion which is sufficient with either of the other conditions to occlude the passage except to pressure, and is opened by the menstrual excretion only after more or less pressure has developed. In older women a complete stenosis sometimes occurs. A thin membrane may form to be ruptured by retained mucous or menstrual flow. Occlusion is sometimes produced by injury to the cervix by instruments used in producing abortion, or after vaporization of the uterine cavity when the temperature has been too high or applied too long and over-heating of the cervical tissues has caused destruction of the mucous membrane.

The position of the cervix may interfere with the entrance of the spermatozoa; it may be too near the ostium vaginæ, as in the long slender cervix or in prolapsus of the uterus; or in retro-displacements the cervix may point toward the pubes.

In the normal position the direction of the cervix is not parallel with that of the vagina, but at right angles to it. And the cervix lying in the posterior fornix places the os in the most favorable position for the entrance of spermatozoa.

Tumors, malignant and non-malignant, developing either in the cervix or uterus, may interfere with the passage of the spermatozoa.

Of the various forms of carcinoma of the cervix pregnancy is more apt to occur with the epithelioma than with the cylindrical celled or the scirrhus varieties. The epithelioma is often of slow growth and beginning on the posterior lip spreads toward the vagina, while the cylindrical celled variety more rapdly extends up into the uterus, destroying the endometrium. The scirrhus destroys the entire cervix and produces a discharge destructive to the spermatozoa. Non-malignant tumors of the uterus often interfere with conception, either mechanically or by setting up abnormal excretions destructive to the spermatozoa or ovum. Enucleation is usually sufficient to effect a cure in these conditions.

---

* Read before the Minnesota Academy of Medicine, March 7, 190[illegible].

Notwithstanding the wonderful make-up of the female generative system it does seem as if nature had complicated conditions unnecessarily in its connecting link between the ovary and uterus. The fallopian tube is, no doubt, the weakest part of the entire system. The smallness, length and tortuosity of its canal all favor its occlusion with the slightest pathological change.

The length of the tube varies from four to seven inches, and the caliber depends on the part of the tube considered, the uterine end having a diameter of about one twenty-fifth of an inch, while the abdominal end is about one-fourth to one-third. Meckel computes the width of the uterine orifice as one-half a line and the abdominal orifice as three to four lines. Some authorities tell us that the uterine orifice is not more than one-third to one-fourth of a line.

When we realize that the generally accepted size of the ovum is one one hundred and twentieth of an inch, we can see with what difficulty the ovum would be able to pass if the uterine ostium is but slightly constricted.

The tubal canal is smallest at the horn of the uterus and gradually increases in size toward the ovarian end. It is the part having the smallest lumen which has the thickest walls and muscular coat. Hence in distension of the tube either due to pregnancy or hydrosalpinx the tendency would be to empty or rupture away from, rather than toward, the uterus.

With the small size of the canal at the uterine end it would require but a slight catarrh of the endometrium or thickening of the body of the uterus at its horn to completely occlude the duct.

We have been led to believe that the smallness of the cervical canal checked gonorrhœal inflammation at that point. Then why should it not be checked at this much smaller opening? It is claimed by some authorities that only about one-third of the women having gonorrhœa suffer from pus tubes. In other words, gonorrhœal inflammation is limited at some point along the course of the mucous membrane, and that, too, in a mucous membrane favorable to the development of gonococci.

In gonorrhœal ophthalmia no attention is given to the tear duct, yet we do not have gonorrhœal rhinitis, and the tear duct is about the same size as the tube at the uterine end. Some contend that the infection is carried from the uterus to the distal end of the tube and ovary by the lymphatics and that this is the reason we so rarely find the proximal end of the tube diseased; that the infection may be carried by the lymphatics from the cervix to the outer end of the tube, skipping the entire uterine mucosa as well as the mucosa of the inner end of the tube. Henroten thinks this the usual route of puerperal infection by latent cervical gonorrhœa.

Whatever the course of infection we know that the abdominal ostium soon closes, due to an adhesive inflammation at the junction of the mucous and serous surfaces, often including the ovary and adjacent serous surfaces with it.

The swelling of the mucosa at the inner end of the tube closes it, and as a result the pus and mucus exuding from the lining of the tube are retained. The accumulation takes place in the distal or larger end of the tube, and as the walls are thinnest at this part distention increases and the thinning of the wall continues until rupture takes place, but more frequently transudation occurs through the wall, producing an adhesive inflammation of the serous covering, and thus the adjacent peritoneal coverings are brought in to strengthen the weaker parts of the wall. The inflammation runs its course, the contents of the tube are gradually absorbed and the mucous membrane may approximate its normal condition. The uterine end of the tube not participating in the inflammatory action to any considerable extent, soon becomes patulous and acts as a drain for the excretion of the remainder of the tube, preventing further distention. The adhesions at the peritoneal end of the tube remain, and therefore sterility must result.

Bettman, of Cincinnati, examining such tubes soon after removal, finds the cilia still active even though the tube is distended by pus, showing their marked resistance to inflammatory action.

With every congestion of the pelvic organs, the so-called colds, the proximal end of this tube is apt to become closed temporarily, and it is probably due to this condition that the "hydrops tubæ profluens" is produced.

We all know the great frequency of recurrence of acute dilatation in these cases following the menstrual flow. The flow may be normal without pain or unusual symptoms, but after the flow has stopped the distention of the tube begins to take place and lasts from one to ten days. If the position of the tube is normal the attacks will recur less frequently and severely, and eventually give little or no trouble.

It is these cases that defy recognition after the subsidence of all acute trouble. Where there is a history of pelvic peritonitis the condition of the tubes might readily be assumed, but in a goodly number there is no history of acute trouble, possibly nothing but a dysmenorrhœa from puberty.

As is illustrated in a patient operated upon last October, who gave a history of having gone in swimming during her first menstruation, which resulted in a cessation of the flow at that time and no return for several successive periods, a general dropsical condition followed, lasting nearly a year. Menstruation was always painful, although general health was good. This patient had been married about eight years previous to operation, but had never conceived. Curettement had been performed twice for the purpose of relieving the dysmenorrhœa as well as sterility. Local treatment had been tried by various physicians for its relief, but treatments and curettements had always aggravated rather than relieved the trouble.

Examination previous to operation revealed left ovary and tube adherent in the cul-de-sac with what appeared to be the right ovary freely movable, but patient was too sensitive to permit careful examination.

Abdominal section showed right ovary and tube practically destroyed, and what had appeared to be an ovary by previous examination was a dense thick-walled pedunculated cyst from the end of the right tube. Left tube and ovary firmly adherent in the cul-de-sac, the strong fibrous condition of the adhesions and the tendinous appearance of the bands indicating their early formation.

Another case in point is that of a woman seen in consultation last spring. A stout, robust-looking woman with no history of illness, but some dysmenorrhœa at times and discomfort in back. The abdominal wall was too thick to satisfactorily palpate the ovaries and tubes, but nothing abnormal could be made out except slightly enlarged uterus. The patient was very desirous of having children and it was largely on this account that advice was sought. Divulsion and curettement was advised and performed, with quick and complete convalescence from the operation, but conception did not occur and symptoms were not entirely relieved. At her request exploratory abdominal section was performed by one of our gynecologists. The tubes were found closed at the fimbriated end and strong bands of adhesions united ovary and tube, showing a process of long standing.

Many other cases might be enumerated, but these are sufficient to show how indefinite and unreliable may be the symptoms produced by tubal occlusion at the peritoneal end, producing absolute sterility.

Accurate palpation of the adnexæ in fleshy women is impossible, and even in spare women tubes sealed at the fimbriated extremity cannot be recognized unless there are more extensive pathological changes.

In cases of sterility with long standing menstrual disturbances, the writer believes exploratory section justifiable, even though palpation is negative.

It is in this class of cases that conservative surgery of the ovaries and tubes may well be made use of, but it requires much more skill to decide which ovary or which tube to do conservative work on than it does to take all out. Convalescence is more frequently interfered with when a part of a tube or ovary is left than when both are wholly removed.

Under mechanical causes of sterility may be included thickening of the albuginea, preventing the rupture of the graafian follicle.

Chronic ovaritis producing this condition may occur without involvement of other organs, but is usually associated with chronic tubal trouble and in such is probably secondary to this affection.

With the thickening of the albuginea usually occurs a general fibrosis of the ovary, and in this condition not only is the follicle prevented from rupturing, but pressure is made upon the developing follicles, preventing their growth and eventually destroying them.—*Northwestern Lancet.*

CREOSOTE: SOME CLINICAL OBSERVATIONS ON ITS USE IN VARIOUS CONDITIONS.

By FREDERICK CLEVELAND TEST, A.M., M.D.,

Assistant Professor of Orthopedic Surgery, Northwestern University Medical Schools; Attending Physician, Halsted Street Hospital; Attending Physician, St. Mary's Home for Children, Chicago.

At the present time, when each year brings so many additions to the materia medica of synthetic coal-tar derivatives, recently identified alkaloids, new organic salts of the metals, and the like, too many general practitioners, confused by the array, are apt to become either skeptics or enthusiasts. A safer stand is rather one in which, while habitually employing established reliable remedies, the practitioner at the same time not only is on the alert to avail himself of such newer aids as are proved to accomplish a given end more satisfactorily than could be done by the earlier means at command, but also on his own account uses his reason, as opportunity affords, in widening the range of usefulness of the seasoned therapeutic weapons he already possesses.

It is in the latter connection that the appended clinical notes are presented, the observations having been made to test for personal satisfaction and by actual experience the therapeutic value of creosote in the several conditions treated with it. The cases by no means develop new facts, but merely show what were regarded as interesting results of creosote administration.

Creosote, though not one of the newer drugs, and in spite of the extensive exploitation it received some years since, when its use in tuberculosis was first advocated, does not yet seem to be as generally appreciated and employed as its properties would warrant. In fact, to all appearances it is not so thoroughly worked out in regard to its physiological action as many remedies of much later introduction, if the space and matter allotted it in the average text-book are criterions. It is briefly set down as a rather caustic antiseptic, which in small internal doses manifests, it would seem, its chief effect on mucous membranes, where it exercises a varying sedative action on the terminal nerve filaments, while at the same time it stimulates the glands by which it is eliminated, rendering the mucus more or less antiseptic, according to the amount of the drug ingested. It is this action that has led to its employment in the treatment of pulmonary tuberculosis.

Indeed, popularly it has come largely to be regarded as limited in usefulness to such treatment, with the occasional administration of minute doses for the relief of obstinate nausea and vomiting. On the contrary, its scope of value is much wider, as has been shown of recent years by the use of it or its derivative, guaiacol, in typhoid fever, and more lately yet by the prominent place accorded it in the newer treatment of pneumonia. It was its employment in other cases, wherein it was thought it might prove beneficial, that led to the formulation of these notes.

As will be seen, a variety of conditions was treated, those being chosen that seemed to require internal antiseptics. Among others, the condition of intestinal indigestion, with its resulting fermentation, so frequently encountered, and which so often offers stubborn resistance to treatment with carefully limited diet, digestive extracts, and various antiferments, affords an excellent field for the use of creosote, as shown by the following:

CASE I.—Mrs. C., aged twenty-seven, housewife. She had the usual history of indefinite digestive disturbances for several years, chiefly showing themselves as intestinal fermentation and flatulence, with frequently intense occipital headaches. Relief from this self-intoxication resulted only when the coexistent obstinate constipation was overcome. The condition was finally aggravated through a surgical operation, when most serious hyperemesis, intestinal paresis, and fermentation were set up by the anæsthetic. This attack was treated with papoid and soda, in conjunction with strychnine, and a strictly non-farinaceous diet was also carried out for four weeks. At the end of that time the condition, though improved, was still one of excessive fermentation, beginning even while a meal was being eaten and continuing several hours, often until the next meal.

The patient then resumed a mixed diet, with the addition of diastase to the medication. The hoped-for pronounced benefit failed to result, and for some weeks following the treatment was with various combinations of the digestive ferments, malt and resorcin, naphthol and salol, the medication being changed when its use for some time failed to show the result desired.

After six weeks the patient began treatment with creosote, in the dose of two minims after meals, the drug being given thoroughly mixed with a malt preparation, for palatability as well as the better to insure its thorough absorption and the minimum of irritation.

The action of the drug was surprisingly prompt, a decided remission of the fermentation following the first three doses. A diminishing degree of flatulence existed for some days, but at the end of the first week of creosote administration there was scarcely a trace of fermentation present. The improvement induced the patient shortly to suspend treatment, with the reappearance of the fermentation after some days as a natural result. It, however, again yielded to the creosote, which this time was continued for a longer period. At present the patient expresses herself as being free from headaches, and practically so from fermentation, although the constipation still exists to a lessening extent.

CASE II.—Miss N., aged twenty-five, factory girl. Patient gave a history of intestinal fermentation and flatulence for the preceding three months, associated with severe occipital headaches and moderate constipation. She was given ox gall, pancreatin, nux vomica, and compound extract of colocynth, with salol and cascara on retiring. This treatment continued for three weeks, with improvement of the constipation, but only a minor bettering of the fermentation and headaches.

The administration of creosote was then begun, two minims being given after meals, as in the previous case. With this patient improvement was slower, but benefit was apparent at the end of a week, and in two weeks the fermentative processes had ceased to give trouble. The creosote was suspended after four weeks' treatment, when there was no noticeable fermentation, and the headaches were infrequent and lighter.

In these cases the antifermentative action of the creosote may have been exerted directly, before its absorption into the system, or later, through elimination by the mucous glands of the small intestines, rendering the intestinal mucus antiseptic to an extent sufficient to inhibit fermentative processes. Since the amount of creosote take was small, it is probable that its action was largely direct, for, as its elimination after absorption is from all mucous membranes, and the kidneys as well, only a small part of the amount ingested would find its way to the intestinal mucous glands.

In connection with the foregoing may be considered the following:

Case III.—Willie F., aged fourteen, schoolboy. Some three years before he had beeen attacked with epileptic seizures, the form being that of *grand mal*, and the attacks lasting from five to thirty minutes. When seen, the patient had been on a steady medication of bromides and other sedatives for a number of months, but, in spite of increasing doses of the sedatives, the seizures continued, occurring every week or two, though much less severe than formerly. Some intestinal fermentation was present, and it was noticed that toward the end of an attack considerable flatus was expelled, followed by the cessation of the seizure. Additional treatment was instituted with pepsin, pancreatin, nux vomica, and salol, in the hope of checking the fermentation. The flatulence and attacks persisted, however.

After about three weeks creosote was substituted for the digestives and salol, in doses of two minims four times a day, thoroughly mixed with malt. The sedatives were also continued. Two weeks later an attack occurred, but lasting only half a minute, and without the appearance of flatus. The creosote was continued two months, with the subsidence of the intestinal fermentation and freedom from further seizures. Shortly after ceasing it a brief attack occurred, but the case remains much improved, with fermentation and flatus absent, and the seizures much less frequent.

The clinical aspects of this case forced the view that the renewed attacks were largely due to gastro-intestinal disturbance, as so often is the case, and the creosote improved the condition as none of the previous medication seemed able to do. That feature being eliminated, the bromides were enabled once more to gain control.

The reports of some other cases of intestinal disturbance follow:

Case IV.—Katie R., aged a year and six months. Patient was suffering with a severe diarrhœa of four days' standing. The bowels were moving seven to ten times in the twenty-four hours, and vomiting occurred three or four times a day. The stools were liquid and greenish and expelled with more or less flatus. The child had a history of measles two months before, and was thin and drawn, with a persisting cough, and a weight of but nineteen pounds. She was put on a diet of sterilized milk, varied with rice water mixed with beaten white of egg. Medication was with calomel, salol, and malt.

Three days later the condition was much the same, except that the passages were somewhat fewer. The calomel and salol were withdrawn and replaced by creosote, one minim every three hours, given in malt. In a week the diarrhœa and fermentation had been entirely overcome, and the stools were practically normal. As a little cough lingered, the creosote was continued some days longer, for its effect on the bronchial mucous membrane. When seen two weeks later, the cough was absent, the color and appetite were good, and the bowels regular. At the end of two months, when observation ceased, the patient was thriving and had gained five pounds in weight.

Case V.—James W., aged six years and six months. Patient languid, with history of almost daily headaches, more severe since an attack of measles two months before, and often associated with a slight rash. Chronic constipation, with frequent flatulence, and poor appetite were present. To relieve the evident self-intoxication calomel was at first given, in hourly one-tenth-grain doses on alternate days.

A week later, the condition being but slightly improved, creosote, in minim doses four times a day, was added to the treatment. After a few days the rashes ceased to appear, and in ten days the headaches and flatulence were much less frequent. The calomel was stopped, but the creosote was administered six weeks, with steady improvement and only one or two headaches. At the end of that time a gain of three pounds in weight was reported, with the child bright and active, and apparently free from headaches and fermentation.

These cases all serve to show that creosote has a very decided value in the treatment of fermentative intestinal disorders, both acute and chronic, and in children as well as adults. It has the advantage of being non-toxic in these small doses, while its ready anti-fermentative action, both before absorption and after elimination, if authorities are right, renders its effect a continuous one. Combined with a mild purgative, to empty the alimentary tract as completely as possible, it promptly acts to render that canal sufficiently antiseptic to overcome the trouble. The rapidity and completeness of this action vary in different cases, but in no instance were good results lacking.

A more familiar phase of the effect of creosote administration, showing its sedative action, is the following:

Case VI.—Mrs. E., aged twenty-five, housewife. She presented herself in second month of third pregnancy, with a history of excessive nausea and vomiting for past four weeks. For the last two weeks she had been unable to retain food upon the stomach more than a very few minutes. She was pale and exhausted from the retching and enforced fasting. Creosote was prescribed in minim doses every two hours until vomiting ceased, a dose being taken before each attempt to eat.

Three days later the patient reported that the first two doses had been thrown up, but that since there had been no vomiting whatever. The creosote treatment was continued ten days, a minim before meals, with steady improvement in appetite and strength, and freedom from vomiting, when the patient passed from observation.

In the cases so far cited the results from the creosote were largely due to its primary action before absorption. In the remaining cases, of respiratory affections, the action was necessarily secondary, after its elimination through the mucous glands, and by its presence in their secretions.

Case VII.—Johnnie M., aged three. Patient had had whooping-cough for six weeks previous, and the paroxysms, when he presented, had begun to be less frequent, though still occurring several times daily, and with violence. Creosote was prescribed in minim doses every two hours.

At the end of a week the paroxysms had decreased about one-half in number and were of shorter duration, with looser expectoration. The creosote was directed to be continued, but the case disappeared from observation.

Case VIII.—Mamie W., aged four. Whooping cough of about two weeks' duration. The paroxysms were occurring two or three an hour, with considerable violence, and not infrequently epistaxis. Creosote was prescribed as above, and appeared to exercise a soothing effect with the first dose. Continued doses caused first a looser expectoration, and then less violent paroxysms, with fewer nosebleeds. At the end of a week the paroxysms were reduced to five or six a day.

The creosote was then neglected, and the case relapsed somewhat. Resumption of the medication again improved the condition, but the case was shortly lost from observation in a state markedly better than before the creosote treatment.

Case IX.—Nellie H., aged four. Patient had a bronchitis of about twenty-four hours' duration. There were some sonorous râles and a rather dry, harsh cough. Respiration was quickened and temperature 101° F. Creosote was given in minim doses every two hours.

Within twelve hours the râles were moister and the cough was looser, and in twenty-four hours the temperature had fallen to normal. The physical signs of bronchitis steadily diminished, and in two days had practically vanished, but the creosote was continued nearly a week.

From the infectious character of pertussis and the presence of the specific organisms on the respiratory mucous membrane, creosote seems admirably adapted to directly antagonize the disease, through rendering the pulmonary mucus antiseptic, and so inhibiting the growth of the bacteria, or destroying them outright. If, as is held by many, bronchitis is a bacterial disease, the germicidal action of the creosote comes into play here also. In both conditions the creosote was given for the effect of its sedative and stimulative actions on the nerve endings and mucous glands respectively, easing the cough and liquefying the mucus, and the results apparently justify the procedure. This in spite of the fact that circumstances prevented satisfactory treatment and observation in all the cases.

The following case may be of interest as showing the action of creosote in its most popularly accepted function:

Case X.—Mike C., aged forty, fireman. Patient gave a history of having coughed for a year and of having had three hæmorrhages a few months before. Coughed a good deal, with some pain. There was some dyspnœa, especially on exertion. Numerous subcrepitant and moist râles, particularly on left side, where a small cavity was found. Expectoration not very profuse. The sputum examination showed tubercle bacilli.

Creosote was given, two minims four times a day, thoroughly mixed with malt. For the first few days no change was noticeable, but by the end of a week the cough grew looser and less painful, and expectoration was freer. In two weeks the patient had less dyspnœa, and declared himself as feeling stronger. The expectoration was decidedly less purulent in appearance and the râles were moister. This condition continued a month, when the patient entered a hospital and passed from observation. In this time there had been a gain of four pounds in weight.

These few cases are cited as showing conditions in which creosote is not ordinarily employed by most practitioners, and yet where it has proved itself to be of value, in some instances where other means were insufficient. The germicidal properties of creosote, and its action on mucous membranes by stimulating the glands and exercising a sedative effect on the nerve endings, both before absorption and on elimination, certainly afford it a wide field of usefulness, which does not seem to be generally acknowledged in its entirety. A frequently quoted objection to the use of creosote is the irritation sometimes produced in the gastro-intestinal tract. This is often due to the size of the dose ingested, for in amounts of several minims it certainly is apt to produce a local caustic action on the average stomach. This can not be thoroughly obviated by administering it in capsules, milk, or other media, if the dose remains large. The safer plan is to give it in smaller doses, frequently repeated, and so thoroughly mixed with some vehicle as to prevent any great amount of the creosote from coming in contact with the mucous membrane at one spot. The menstruum used in the above cases was maltine, with which the creosote was thoroughly incorporated, and thus so completely subdivided into minute droplets as to minimize the chances of caustic action. This subdivision also rendered its absorption more rapid and complete, and so by the frequently repeated small doses the effect of larger doses was really attained, without their irritating action. When, then, the safety and value of creosote in such cases as the foregoing and allied conditions are better appreciated than at present they seem to be, its more extensive employment surely may be expected.

4401 Indiana Avenue.

SOME REMARKS ON THE TREATMENT OF SYPHILIS.

By CHARLES J. PROBEN, M.D.,
Clinical Assistant to the Chair of Gynæcology, Medical Department, Columbia College.

If comparison is invited with the class of ordinary infectious diseases syphilis will be found to have many points in common. In fact, syphilis is regarded as an infectious disease, imparting its virulence from a local focus to the fluid tissues, producing constitutional symptoms, which abate and in their wake leave insidious constructive processes that ultimately degenerate and take on a destructive type. Practically a division of syphilis into primary, secondary, and tertiary stages is helpful in ascertaining pathological conditions and the resultant treatment, though such classification may appear rather arbitrary and fanciful. Rather a debatable question arises, why one person should present an apparent immunity to the syphilitic virus, while another may become severely infected by inoculation. No doubt good general health offers a certain check or a bulwark in counteracting the effect of this morbid infection. Susceptibility of the individual probably depends upon the inherent vulnerability and the resistant power of the tissues of the healthy body. And the better the health appears the more reasonable would it seem that the tissues and the circulating fluids should counteract this unknown poison. Hence no two bodies exhibit the same degree of virulence, and no two bodies present the same fortifying and repelling influences of their tissues. Whether the disputed germ of syphilis or its resultant ptomains are responsible for the prolific cell growth in lues I am not prepared to state. This luxuriant cell growth readily and vigorously attaches itself to the walls of the lymph and the blood vessels, and so induces many morbid tissue changes. It is surmised that this almost explosive cell distribution throughout the body wages constant war against the tissues, the cells finally implanting themselves upon some vulnerable point, producing morbid processes extending over a number of decades, or even over the lifetime of the individual. Manifestations may appear at any time without warning; in fact, in the course of time they become more alarming and destructive, finally leaving irremediable sequelæ. Implantation of syphilitic processes acts at first destructively upon the functions of the organs, later sapping their very vitality.

The morbid tissue of syphilis is of a granulation type and has certain characteristics to distinguish it from other types of tissue. Granulomata are apt to infiltrate the lymph vessels and nodes and the walls of the blood vessels, being accumulative primarily, but owing to poor vascularization they readily undergo destructive metamorphosis. This tissue has characteristics in common with other tissue, in that it is subject to attacks of inflammation, suppuration, and caseation, yet it is a notable and a characteristic fact that even large accumulations of syphilitic granulation tissue become entirely dissipated by vigorous antisyphilitic medication. This capacity for complete absorption and disappearance without leaving any marks of ulceration or degeneration may be caused by various factors, but it strikes me that it is the only morbid tissue which will positively yield to medicinal treatment. The ravages of the disease increase with age, though it might be supposed that the germicidal effect of the blood plasma would be antagonistic to syphilitic infection, and so wear out its virulence. There is a constant effort of one trying to conquer the other, health having the germicidal action of the tissues in its favor. Our gratitude is due to the natural processes of our fluids, which are usually victorious; for experience teaches that in years elimination of the infection takes place in over two-thirds of those afflicted, who fail to record any but primary and secondary manifestations of this dreaded monster. In other words, we may put it as an axiom that over sixty-five per cent. of the afflicted escape tertiary manifestations or sequelæ, the foe being conquered by the elements of time and good health. Prolific cell hyperplasia at first gives rise to indurations; steady accumulations give rise to swellings and tumors. Progressive plastic elements increase the thickness of the walls of the blood vessels, obliteration of their lumina may ensue, with thrombosis and embolism and a cut-off blood supply. For a vital organ like the cerebrum we see how important and necessary a good supply is—far more so than for the spinal cord. As a sequela a subsequent destruction of tissue takes place; the function at this area is forever destroyed, and it would not be feasible to suppose that this softening could ever be completely regenerated. This is one of the destructive ravages of this dread disease; and while we cannot regenerate what is completely destroyed, we may hope to check the progress of a contiguous and similar process which has not so far advanced. Suppose pressure of a similar growth upon the delicate nerve fibre produces a descending nerve degeneration with entire disappearance of axis cylinder and replacement of connective tissue, would we expect the connective-tissue changes to disappear completely, after their existence for a long time has caused the nerve to cease functionating? No, undoubtedly not, though we are aware of the great reparative power of nerve fibres, especially if peripherally injured. You say, What has all this to do with syphilis? A great deal, I say, because many of us expect to cure all kinds of lesions if they are syphilitic in character; we do not consider that they are sequelæ, which fail to respond to treatment, though they may have been caused by syphilis. Especially does this argument hold good in various cerebral affections of an organic type, excluding functional and nutritional diseases, in which syphilis plays a very important role as a causative factor—in fact, the most important, excluding heredity, worry, excitement, alcohol, etc. Nerves are far more prone to become regenerated, but they never can replace connective-tissue changes; restoration is as impossible in descending degenerations as it is impossible to restore cerebral softening when function has once become lost. In these lesions we must not expect too much from treatment, though we may be able to inhibit a further extension of the disease. There is no relation between a primary focus of infection, which may be very minute, and later manifestations, which may appear very severe and destructive. As a rule, from the local focus of infection we have little to fear; it is the harbinger of an already infected system, which may be followed by syphilodermata and a febrile movement. The multiform eruptions of the skin need give us less apprehension than the visceral complications, which are apt to appear later, affecting the functions seriously and inducing structural lesions. These remarks apply generally, except to those cases dreaded so much, though fortunately rare, the cases of galloping syphilis. The mooted question, whether tentative excision of the local infection should be practised in order to induce a more favorable and attenuated disease, can be readily dismissed with the answer that extirpation is rarely practised, though it may appear to hold out hopes of lessening the virulence of this noxious poison. It is well known that the cure of the focus is a simple matter, unless a mixed infection causes much suppuration, when radical means must be resorted to. Excision to-day is very much discredited, as infection readily extends and permeates the tissues with wonderful rapidity. Enlargement of lymphatic vessels and general adenopathy, especially inguinal, and the syphiloderma, usher in the second stage. If the initial lesion is a doubtful one, it is a much disputed question whether to begin treatment at once or wait for secondary manifestations. In order to give weight to our diagnosis and to strengthen our belief, it is better to wait until constitutional evidences arise rather than subject the victim to tentative treatment which is productive of nothing but leads us into error, not only for a short time but for a number of years, when we may regret to have before us an example of disease of a questionable character. The appearance of objective signs, taken in conjunction with an initial infection which was of a dubious character, will give a picture that removes all future ambiguity as to the character of the treatment to pursue. Great injustice may be done the patient in suspending over him a constant cloud of condemnation, whenever a symptom arises that cannot be explained, and that with great trepidation will surely be ascribed to the causative influence of syphilis. Syphilitic virus tenaciously lurks in the organism and insidiously affects the viscera and the osseous system, gradually producing serious lesions, the more rebellious to treatment the longer the processs has continued.

Allusion has already been made to the resistant and overpowering action of the healthy tissues of the economy, and the possibility of a successful combat of the normal tissues with the specific poison, gradually attenuating the virus and rendering it innocuous, till at last they gain a decided victory over their weakened foe, that finds no further nidus for implantation and finally succumbs. Whatever be the character of the poison or its composition, though not an entity, it is apparently never dormant, always eager to prey upon weakened tissues, and this will explain why tissues debilitated by constitutional vices, dissipation, and alcoholic excesses succumb readily. Hence it is of the utmost importance in the treatment of syphilis to have a patient in as good a physical condition as we may possibly secure. Some of the worst cases of tertiary syphilis we see in those who in their youth have wilfully abused their constitutions, and who appear not well able to cope with the inroads of disease.

Medicinal treatment of syphilis by mercurial salts has been well known for centuries. In fact, these salts have been eminently successful in the primary stages; but the same cannot be said of iodide of potassium, though it appears absolutely necessary in the later stages to facilitate the melting away of plastic material and young connective-tissue changes. Without mercury it is impossible thoroughly to eradicate the disease and ultimately cure the patient. Some observers contend that the iodides alone are curative. This is a doubtful assertion. Mercury forms the sheet-anchor and is the greatest foe of syphilis. Symptoms of the tertiary stage frequently appear of a dubious character, but the history of the patient and the subsequent objective signs create important links in the chain of our diagnosis. The etiological factor may long have been forgotten or may have been intentionally kept from the practitioner; the same may be said of the secondary manifestations, and no evidences may exist save a general adenopathy. Our diagnostic acumen is very much taxed but the suspicion of syphilis lurks everywhere about the patient, and here we realize the necessity of the so-called unscientific therapeutic test. Many objections may be raised against this fallacious argument; it is only tentative, but as an example let us take an obscure cerebral disease, with an organic lesion possibly located, but whose character is unknown from its very obscurity; no history of primary infection in youth, no etiological factor to assist us, and yet we are forced to accept syphilis as the most probable factor of its existence, or at least we suspect it. The family history is blank: an examination of the iris and cranial nerves, and an ophthalmoscopic examination of the choroid and the optic nerve, may assist. Providing we find an absence of a definite cause and absolutely no evidence of constitutional syphilis, the query is, what our treatment should be and whether we are justified in tentatively using antispecific remedies.

On the strength of past numerous successes and the rapid amelioration of symptoms and objective signs, though we cannot demonstrate any evidence of syphilis, we are forced to admit the frequency of syphilis as a causative factor, and our justification is well supported by a possible recovery. I am well aware that I am generalizing my remarks and am treading upon somewhat foreign ground, but an admission of ignorance is better than confident assertion of controvertible statements. It is true that heroic antisyphilitic treatment has frequently caused marked amelioration of severe brain symptoms, supposedly due to syphilis, but later demonstrated to be due to other causes widely divergent and not specific in character. The truth of this objection has especially impressed itself upon me in cases of tuberculous meningitis of children, when an apparent lull in symptoms, even holding out hopes of recovery, was caused by the administration of large doses of the iodides and by inunctions, which fact tended to deceive us severely. It is difficult to account for these phenomena, save on the theory that the amelioration of symptoms could be ascribed to an increased absorption of liquid elements by a lymphatic system, whose activity had been markedly increased by the stimulation of the drugs administered. This test is not without its fallacies, and is consequently forcibly held out as irrational by the opponents of specific treatment in chronic cerebral disorders. Yet it must be contended that in these obscure cases palliation is the entire extent of our resources. The query naturally arises, whether we are justified in forcing the patient to submit to a heroic form of specific treatment when the etiological factor is in doubt. As a rule, very little detriment results from such a procedure, and much may be gained in a doubtful case. Justification of aggression by resultant cure in a single case, though it had been merely tentative, will well repay us for a dozen failures. While the plan seems unscientific and irrational, the patient's feelings are very little influenced by adherence to the strict rules of our science as long as we can hold out relief and a possibility of a cure. Especially does this apply to those young in life, when cure signifies much for their future welfare, or, if not a cure, at least a checking of the degenerative process and prevention of subsequent recurrence. Degenerative types of disease, especially with multiple patches of sclerosis as a basis, can be hardly expected to yield to treatment, though it be heroic, as no drug is known which will cause dissipation of firm scirrhous connective tissue. Though the so-called stages of syphilis are an arbitrary division, yet they help us to understand more thoroughly the pathological conditions and the principles upon which a rational treatment of syphilis is based. From our present knowledge we infer that the proliferative cell growth of syphilis produces accumulative lesions, which must be affected by drugs in a way to cause dissipation or dissolution, in all probability by a process of fatty metamorphosis. Syphilitic granulomata, more than any other tissue, in fact characteristically so, completely disappear under proper treatment, leaving no vestige of their presence. This property of causing fatty degeneration is ascribed to the mercurial salts more than to any other drug. When the deeper connective tissues are affected, the iodides are especially useful in stimulating the various lymphatics to increased absorption and in arousing the emunctories to eliminate the products of fatty metamorphosis. Regarding the quantities of mercury and the iodides that effect this change, every case is a law unto itself, except that the drugs should be administered with firmness and heroically. Iodide toleration is usually well marked in syphilis, though various idiosyncrasies play an important rôle in its administration. Iodism, with its well-marked rhinorrhœa, various skin eruptions, and gastro-intestinal irritation, are drawbacks familiar to all. Symptoms of iodism may primarily be well marked and cause an interdiction of iodides; again, they may readily disappear by persistence in the drug. H. Wood even goes so far as to say that if 4 gm. of iodide of potassium is administered three times a day without producing symptoms of iodism, it shows that the patient is afflicted with syphilis. This is a dogmatic assertion, for I have frequently seen proof that idiosyncrasy against the drug is overcome by energetic persistence of administration. On the other hand, a severe syphilitic case may not tolerate even minute doses of iodides without a profound impression and aggravated constitutional disturbance being produced. When danger is imminent and deglutition is impossible, iodides may be administered per rectum. Absorption is notably enhanced by dissolving the iodide in a warm saline enema. Oral administration in the ordinary case, which calls for no particular hurry, requires average doses of from ten to twenty grains three times a day; when danger is imminent, as much as one-half ounce may be administered three times a day; and this without apparent detriment to the patient's health; in fact, as the patient improves he may put on flesh and fat. As a warning in some cases, emaciation may set in and be rapid, owing to the large doses. Careful watch should be exercised to detect this beginning waste and check its further progress. Iodides should always be given well diluted with water, preferably after meals. In but two conditions I am aware of the harmfulness of iodides. The first is in some cases of optic neuritis, in which it facilitates the atrophy and loss of function. In the second, in cases of general or pulmonary tuberculosis, iodides increase the rapid wasting of the tissues. The disappearance or rapid amelioration of grave symptoms under iodide treatment would lead us to infer that the case is specific, or at least would offer strong presumptive evidence of syphilis, though we may have no right to assume this in the absence of a history to that effect.

Our materia medica teems with countless drugs, few of which can be considered true specifics, among which mercury occupies the foremost rank in the treatment of syphilis. Centuries have been unable to weaken the usefulness of this drug; rather has time tended to strengthen our opinion regarding its effectiveness if properly used. Besides having ascribed to it a specific action upon the doubtful germ of infection, it is supposed to act upon syphilitic granulomata, causing them to undergo a process of fatty degeneration which facilitates their absorption.

While the drug has innumerable advantages, it has many disadvantages, especially in the hands of the tyro. One of these is its marked tendency to cause local disturbances in the buccal cavity, affecting the gums and neighboring glands, giving rise to increased salivation and to pain and tenderness. Notably is the condition made worse by vulnerable spots in the mouth, especially diseased gums and teeth, which call for a thorough overhauling before a course of mercurial administration is begun. Certain salts of mercury are more prone than others to produce salivation. Whatever salt be selected by the practitioner, this tendency should always be kept in mind and the method best adapted to the case should be chosen. There is no doubt that the economy is unable to assimilate the amount introduced, especially if given by mouth, when it has a marked tendency locally to affect the gastro-intestinal tract, and if the secretions give a warning to their lessened activity. The emunctories require careful attention, especially if the kidneys seem to be in a state of acute or chronic inflammation, since they eliminate the metal and throw off quite a quantity from the system. A marked pathological condition of these organs may constitute a distinct contraindication to large doses of an irritating mercurial salt.

From time to time various plans of treatment with salts of mercury have been suggested, but the three most prominent ones are the expectant, the continuous and the interrupted. Each has its advocates; however, rules, especially if absolute, never take the place of brains. From time immemorial the expectant plan has held sway, which consists in administering mercury only when symptoms or objective signs appear.

After their disappearance no further treatment is deemed necessary, unless signs of syphilis should again present themselves. The fallacy of this plan is that recurrence in some form usually takes place; in fact, quite frequently an aggravated explosion takes place after a period of quietude. The numerous hospital and dispensary patients generally present themselves only when some manifestation of the disease appears, and receive treatment for the time being, to be lost to view after relief. Recurrences are consequently to be expected; in fact, it is surmised that many severe cerebral cases occurring late in life are due to the short term of medication, which allows the poison to remain latent and to show augmented activity in later life. The continuous plan of medication appears more rational and has many advocates, foremost among whom is the older Keyes, who has formulated many nice rules. He aims at obtaining a saturation point of the system by administering large and increasing doses, as large as the system will tolerate—this only for a limited time. Mild colicky pains and a serious diarrhœa determine this so-called saturation point. These are supposed to show a bare excess of the amount the system can take or tolerate, and half this quantity denotes the tonic dose. The toleration dose and the tonic dose are alternated, the possibility of abdominal symptoms being always kept in mind. After a continued administration of mercury the system seems to adapt itself to its presence, and the doses are apt to lose their therapeutic effect; markedly so is this the case in syphilis. In order to prevent this, some favor the withholding of mercury for some time, in the interim giving tonics and trying to build up the system. Owing to the necessity of withholding mercurial treatment for a short time, the interrupted plan has found many advocates, foremost among whom is Fournier. It must be remembered that those persons who are otherwise in good health present the best subjects for treatment. They respond far more readily; a less favorable nidus exists for the development of syphilitic cells, which are alert for a vulnerable point.

Hygiene offers us an important adjunct to treatment and is responsible for some excellent results obtained at local bathing resorts, where the habits of life of the individual are completely changed. Notable in such respects is abstention from alcohol and tobacco. It has already been indicated that oral administration of mercury calls for watchfulness for symptoms arising from the gums and the buccal glands. Though this is the favorite method of administration, it will be noticed that some salts of mercury produce salivation more readily than others, also that some are more effective than others. The insoluble salts of mercury are still in vogue, though soluble ones appear to have the preference. Green iodide, once a favorite, is weak in its action, while the soluble bichloride is more effective, especially if given in conjunction with the iodide. Oral administration of mercury is especially adapted to the early stages. When it cannot be thus given and when heroic dosage is required, inunctions and hypodermic injections are preferable. Though the former constitute the most simple and the usual method, they furnish an additional way of introducing mercury into the system. The elegant preparation oleate of mercury has proved an almost signal failure in severe emergencies. Inunctions of unguentum hydrargyri, though not so cosmetic, can be depended upon when a rapid impression is desirable. One or two drachms should be thoroughly rubbed in for about one-half hour daily until physiological effects are produced. Rubbings are at the same time helpful when local lesions exist, though situated in the deeper tissues or in the vicinity. Warm baths in conjunction facilitate the absorption of the minute globules of mercury. The simplicity of this method of introducing mercury into the system has secured for it a host of friends, who prefer it to the hypodermatic method, which has for its bugbear pain. However, when rapidity of action and certainty of dose are desired it can be depended upon, especially if the soluble salt is used. Pain in some cases is probably due to a precipitation of the soluble salt in the blood plasma, which in turn dissolves in the alkaline fluids assisted by sodium chloride. Theoretically and practically, this gives us a hint to use a saline solution for our menstruum, in a syringe capped with a gold-plated needle. The site selected for the injection should be the nates and the deep intermuscular tissues. If injected into the deeper layer of the true skin, a slough results; if into the intercellular tissues, pain usually follows. It is a noteworthy fact that injections seldom affect the gastro-intestinal canal. Solubility of salt should be attained, as insoluble salts must first undergo chemico-physiological changes before they can become absorbed by the lymphatics and pass the lymph nodes. Osmosis becomes more difficult the more radically different the salt is from the compositions of the blood serum. Hence it seems to me that oily menstrua holding these salts in suspension are objectionable. Liquid paraffin, almond oil, vaseline oil, etc., are as objectionable as is unaseptic gray oil. Insoluble salts are numerous; calomel seems the most preferable, from the fact that it can be freshly sublimed and is then in an aseptic condition. These injections, of about gr. i. to gr. iss., should be made in a suspended form into the intermuscular tissue of the nates and repeated not oftener than once a week, allowing the salt to become slowly brought into solution. Pain may thus last a number of days, as we have a foreign body in the tissues; and such complications as suppuration and embolism are rather the exception. It appears an unscientific and a risky procedure; one failure makes us apprehensive, and is apt to curtail its further use. On the whole, soluble salts are preferable; but kidney complications should always be kept in view. Intravenous injections of bichloride have been used, and with success, in tropical malarial toxæmia.

While I have but cursorily touched upon some of these interesting points of mercurial administration, much more could be said of a combination of drugs, of legions of drugs, especially of vegetable origin, which have proved signal failures in the treatment of syphilis. The necessity of improving the patient's general health and of placing him in the best hygienic surroundings must be obvious to all. By our knowledge of the physiological functions and of the action of drugs we assist nature to resist the action of venom and successfully to cope with disease. Through the agency of the fluid elements of the body we introduce medicaments known to be capable of coping with an enemy making serious inroads by his destructive ravages—while art assists, nature tends to heal. The deadly comrade of Venus continues to select its victims irrespective of rank or position. In the firmament of our materia medica the constellations present innumerable luminous foci, the majority of which are faint and lusterless, but among a few one remains fixed, full of luster and lumen, with an indelible inscription upon it—"hydrargyrum."—*Medical Record.*

DEATH FROM CARBON DIOXIDE POISONING IN A BREWERY.

By **W. SCOTT THOMSON, M.R.C.S. ENG.,**
Assistant Surgeon, Rhymney Works.

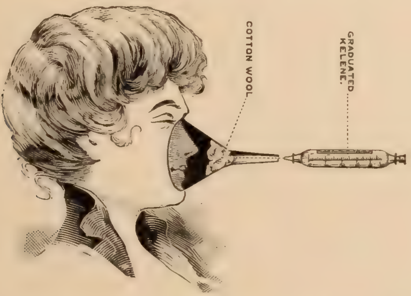
On March 2d an inquest was held at Rhymney, Mon., concerning the death of a well-built, sober, industrious man, 25 years of age, employed in the Rhymney Brewery. It appeared that his duty on the day when he met his death (Monday, Feb. 26th) was to clean out a vat, or "piece" in brewing parlance, as he had been accustomed to do once or twice a week for the past six mouths. The vat in question was eight feet in depth and six feet in diameter, having a manhole 18 inches square, an almost obsolete pattern, the modern one being large and shallow. The vat was used for storing beer prior to "racking." The beer was drawn off on the previous Saturday morning, leaving a sediment or "slummage" of a few inches in depth at the bottom. The vat was then flushed with water and the cover put on the manhole some time in the afternoon—it is said, by the deceased man himself—and it remained closed till 6:15 a. m. on the Monday. The object of covering up the vat was to facilitate the subsequent cleaning, as otherwise the sides became dry. After removing the cover and allowing the hose to run into the vat for ten minutes the man was seen to enter the vat with a lighted candle in his hand. About twenty minutes or twenty-five minutes later a cellarman, wishing to borrow the mop, called out to him and, receiving no answer, went up to look for him, when he saw him lying on the bottom of the vat face downwards with the ladder, which had fallen on its side, resting up against his body. The candle was subsequently found on the bottom. This is an important fact, as it indicates that the man was overcome before or shortly after he had reached the bottom—the custom being to stick the candlestick into the side of the vat, a spike being attached to it for that purpose. Having called for help and procured another ladder from an adjacent office the cellarman descended the ladder, followed by another man. They hitched a rope round the deceased's arm and with the aid of some other men got him out of the vat in about three minutes, when I was immediately called and arrived on the spot within a quarter of an hour. The condition of the body was as follows: The heart had ceased to pulsate, there were no visible respiratory movements, and there was some frothy fluid about the mouth and the nostrils. The skin was pale, the lips and eyelids were slightly cyanosed, the eyes were half open, the pupils being widely dilated, and the expression of the face was calm and placid. The anterior surface was cold, whilst the back was fairly warm, and there were no marks of injury. After having the man suspended head downwards, when a small quantity of fluid, not of a frothy character, escaped from the mouth, I performed artificial respiration by the Sylvester method for forty minutes, but without success. During the manipulation froth exuded from time to time from the nostrils.

An examination of the vat showed, besides the candlestick on the bottom already mentioned, a certain quantity of water which, owing to a warp, was in some places three or four inches in depth and in others entirely absent, and it was in a pool that the deceased's body was found with the face downwards. In my evidence I stated that all the signs pointed to death from suffocation, but whether the man had been rendered insensible only by the carbon dioxide and then drowned or had been poisoned by the carbon dioxide only, I could not positively say. The latter, however, was quite compatible with the signs. The coroner (Mr. J. B. Walford) in a very able summing-up dismissed the idea of death being due to syncope or a fall from the ladder, there being no evidence whatever that the man had suffered from heart disease, and there were no marks of injury on the body or signs on the bottom of the vat of the ladder having slipped. He therefore considered it to be a case of poisoning by carbonic acid gas. This, however, does not seem so simple, as two men went down within half an hour at the most and stated that they felt no inconvenience from the fumes; but probably the fall of the man and his pulling the ladder down disturbed the dense layer of carbon dioxide, which, being heavy, is always most concentrated in the lowest part of a mixed atmosphere. It was also stated by the widow of the deceased that he had frequently complained to her of the effects of the fumes, so much so that he said it was not safe to go into the vat without a man being outside to watch. The two witnesses who pulled the body out had on many occasions cleaned the vat, and they stated that it did not affect them. It seems hardly likely that the deceased had any idiosyncrasy, as the effect of carbon dioxide is chemical rather than physiological. Would a post mortem examination and a spectroscopic examination have been of any scientific value? Hardly; and, moreover, as the coroner said, a medical man has a fixed legal fee of a guinea, while an analyst can charge what he pleases. The most important point about this inquest, so far as the public is concerned, is the prevention of such accidents in the future. It is the rule in most breweries—and in this brewery at Rhymney it is the rule with regard to the larger vats—to have a man placed outside as a watch and to lower a lighted candle before entering the vat. But is that rule always put into practice? And surely the fact that a candle will burn in an atmosphere containing 10 per cent. or 12 per cent. of carbon dioxide, whereas death will occur in one containing only 4 per cent. or 5 per cent., makes the candle test no sufficient guarantee of the fitness of an atmosphere for respiration. The jury brought in a verdict of "Death by misadventure," and added a rider that more stringent precautions ought to be taken to test the purity of the air and that a watch should always be placed outside the vat.—*Lancet.*

EXPERIENCES WITH ETHYL CHLORID IN GENERAL ANESTHESIA*

By JAMES P. TUTTLE, M.D.,
Surgeon A. H. and W. H. Hospitals; Professor of Rectal Surgery, New York Polyclinic, New York City.

For many years ethyl chlorid has been known as a local anesthetic, and to some few as having properties of a general one through inhalation. Its use has never been very general, however, and information concerning it has been very meager until recently. Almost all physicians have used the drug as a local anesthetic, some more and some less extensively. In this manner, it has never compared with cocain, and can never supersede that drug. I do not propose to go into the literature of kelene anesthesia, but during the discussion of general anesthesia, it might be well to make public some experiments I have been making for the past three months with ethyl chlorid as an adjuvant to ether anesthesia.



After reading the report of Army Surgeon Weisner, in November last, I determined to give kelene a trial as a general anesthetic. Accordingly, having obtained a graduate tube with a proper sized aperture for general anesthesia, I made my first experiment on November 15. My patient was a strong, well-developed man of 45, suffering from a fatty tumor under the border of the scapula. The kelene was administered and insensibility to pain produced in four minutes. The muscles, however, did not relax to give me easy access to the tumor, and as I had no encouragement to suppose they would so relax, from the experiences of Hecker, Weisner and others, I ordered my anesthetist to change from kelene to ether. In less time than it takes to tell it my patient was entirely under the influence of ether and the muscles entirely relaxed.

---

* Read in a Discussion on Anesthesia, before the New York County Medical Association.

Indeed, so rapid was the effect at first produced that I was alarmed; but as there were no symptoms to justify alarm, I went on with my operation. The result in this case was so happy that I determined to try it on my next patient, one with hemorrhoids. In such cases kelene would not prove a satisfactory anesthetic, because it does not relax the muscles, and here this relaxation is absolutely necessary. Therefore I administered the kelene for three and a half minutes, or until the patient was insensible to touch of his conjunctiva or to the pricking of a hypodermic needle. The Ormsby ether inhaler was then applied, and in two minutes by the watch our patient was completely anesthetized and relaxed, making in all five and a half minutes for the complete anesthesia.

So pleased was I with the results in these two cases, that I began a series of experiments with the drug as an adjuvant to ether anesthesia. The method employed was as follows: A graduated tube of pure ethyl chlorid, with a larger aperture than that ordinarily used for local anesthesia, was employed. An Esmarch chloroform inhaler, covered with several layers of gauze, was placed over the patient's nose and mouth; the kelene was then sprayed on its under surface and the patient directed to inhale deeply. The spraying was renewed whenever the vapor ceased to appear on the patient's exhalation. As soon as the patient became insensible to the prick of a needle or the touch of his conjunctiva, the Ormsby ether inhaler was applied and the anesthesia completed.

I wish to record forty cases. I will not present them in detail, as they vary only in the time consumed in producing anesthesia, which in the successful cases never exceeded seven minutes. I shall detail one case, simply as descriptive of all the others.

J. G., a grocer's clerk, 35 years of age, of ordinary habits had hemorrhoids. Pure ethyl chlorid inhalations were begun at 3:10—pulse 74. Insensibility to touch was produced at 3.12½—pulse 80. The ether cone was applied at 3.13. The patient was completely relaxed and ready for the operating-table at 3.15, just five minutes after the commencement—pulse 80. Consciousness was apparently never lost during the kelene administration. I could talk to the patient and receive answers up to the giving of the ether. He responded when requested to breathe deeply, and would move whichever hand I indicated. There was a momentary spasm of the glottis when ether was begun. There was no struggling and no cyanosis. The patient recovered from the ether ten minutes after the removal of the cone. He had no nausea nor vomiting; in fact, no symptoms that would indicate that he had taken an anesthetic. The amount of ether used was not measured. The thirty-nine other cases, with four exceptions, were practically the same, some of them taking more and some taking less time, the shortest three and a half minutes, the longest seven. In some cases there was more or less struggling for a minute or less when the ether was begun, but these were isolated cases where the kelene anesthesia was not carried far enough. Ordinarily, I was able to speak to the patient, telling him that the ether would strangle him a little, and thus control him until a few deep inhalations had been taken, thus putting him beyond the point of consciousness. At this point an unconscious struggle may occur, but only in a small minority of patients. Recovery from the ether was always rapid. In a few cases there was some nausea; but, on the whole, I think I may safely say that this disagreeable feature of ether anesthesia was greatly reduced. I inquired of a number of patients whether they had any recollection of the application of the ether cone and of the slight struggling it produced, receiving a negative reply in every case.

In the reported patients there were four in whom the use of the drug was unsatisfactory. Two of these, it would seem, were insusceptible to the influence of ether, and in both of them I was finally compelled to resort to chloroform, before I could induce anesthesia and relaxation. In another the ethyl chlorid seemed to have no effect whatever, and even after it was discontinued and ether used with the greatest freedom, it required over twenty-five minutes to induce anesthesia. The fourth was a woman so anemic, and with such feeble circulation and shallow respiration, that it appeared that neither drug was absorbed rapidly enough to produce quick anesthesia. It took more than fifteen minutes to anesthetize her. These four, however, were none the worse for having tried kelene, and I am certain the drug had no influence in retarding the ether anesthesia. The method of using the drug has been described above.

The amount of ethyl chlorid used varied from 10 to 20 c.c. I consider it important to have a graduated tube with a large aperture, so that the drug will not be wasted by evaporation, as it is sprayed on the mask.

The requisites of a perfect anesthesia are: 1. Safety to the patient. 2. Insensibility to pain. 3. Complete relaxation. 4. Easy and rapid production of effect. 5. Freedom from disagreeable or dangerous after-effects. 6. Simplicity of administration. After more than fifty experiences with this drug in connection with ether, it seems to me that most of the above requisites are met with by this combination. The time required has been less than that required with nitrous oxid as a precedent to ether. There have been no accidents and no physical symptoms which would lead us to believe the drug, thus administered, anything but perfectly safe. The amount of ether used has been greatly lessened; the recovery from anesthesia much hastened; nausea and vomiting are practically obliterated, and the elements of shock have been greatly reduced. Moreover, we have had no experts, but simply an operative surgeon—the author—and the ordinary house surgeon, to administer it. There is no complicated, cumbrous and costly apparatus necessary for its administration, and it does not require a Saratoga trunk to carry it around. If such experiences with kelene shall be verified, it seems to me its use will shortly supersede that of nitrous oxid, and much of the dread shock and disagreeable experiences of general anesthesia be done away with.

35 West Forty-fifth street.

OBSERVATIONS ON THE RECENT PATHOLOGY OF ACUTE LOBAR PNEUMONIA AS A BASIS FOR TREATMENT.*

By JAMES K. CROOK, A.M., M.D.,

Adjunct Professor of Clinical Medicine and Physical Diagnosis at the New York Post-Graduate Medical School.

Acute lobar or fibrinous pneumonia has been definitely placed among the infectious diseases. Modern research has advanced so far as to have demonstrated its pathogenic microbe with almost complete satisfaction. Only a little is lacking to prove that the diplococcus lanceolatus of Weichselbaum and Fränkel is responsible for the inception of the disease and for its continued manifestations in the system. It is known that the coccus is present in a great majority of cases in which careful microscopical examinations are made, and it has been further shown that when injected as a pure culture into the lungs of lower animals it usually gives rise to hepatization of the pulmonary structure.

For the reason that it is not invariably present in the pneumonic lung, and that its introduction does not always cause a reproduction of the disease, it does not fulfil the requirements of a pathogenic microbe as conclusively, for example, as does the anthrax bacillus, the spirillum of relapsing fever, or Koch's tubercle bacillus. As Pye-Smith has justly observed (Allbutt's System of Medicine, vol. vi) other preliminary postulates also appear to have been somewhat neglected in this connection. Positive proof of pathogeny requires that the microbe should be "specific"—that is, should be a good botanical specimen possessed of definite and constant characters—so that it can invariably be recognized beyond dispute. The morphology of the pneumococcus is admitted to be illusory. It varies in different periods of its growth and under different conditions, and may almost arbitrarily be described as a micrococcus, a diplococcus, or a streptococcus. It has also been variously described as being oval, or lancet-shaped, or as a bacillus. Sometimes it is encapsulated, sometimes not. The shapes assumed under different methods of cultivation are not always decisive, nor are the reactions to staining agents. Another confusing element to the seeker after light on this subject is the fact that the variety of pneumonia is not always carefully specified by the writer.

Pneumonia is not so well defined a term as phthisis pulmonalis, for example. We understand by it an "inflammation of the lungs," but this might be lobular pneumonia or bronchopneumonia, pyogenic septic pneumonia, fibrous or interstitial pneumonia, or, finally, croupous lobar pneumonia. The microbe of Fränkel appears to be very commonly present in all of these conditions, while not invariably present in one. On the other hand, it has been shown with great clearness by competent observers that hepatization of the lungs may be produced by various other organisms, viz., the bacillus coli commune, the Klebs-Loeffler diphtheria bacillus, the microbe of typhoid fever, the bacillus erysipelatus, and by various streptococci and staphylococci. In a study of an epidemic of what appeared to be croupous pneumonia at Middleborough, England, in 1889, Klein found the diplococcus replaced by an unknown bacillus in every case—probably the bacillus botulinus of Ermengem.

---

* Read before the Medical Society of the State of New York, Jan. 30, 1900.

It must be confessed that while Fränkel's organism is undoubtedly largely concerned in the natural history of acute fibrinous pneumonia, and possibly as valuable a means of diagnosis as Koch's vibrio in Asiatic cholera, we cannot yet pin our faith to it as the one invariable cause of the disease, nor are we in a position, it seems to the author, to base a system of remedial medication upon its presence or absence in suspected cases. It is fairly well established that these microbes are always present in the mouth, throat, and larger bronchial tubes.

Recent experiments by Bezancon and Griffon (*Société des Hôpitaux de Paris*) showed the presence of Fränkel's diplococcus in the tonsillar secretions of every one of forty persons living under most diverse conditions. Thus, while it is possible for the germs to reach the lungs through the blood-vessels or lymphatics, it must be taken as fairly conceded that the usual method of access is through the bronchial tubes. There can be no doubt that certain conditions of depressed vitality resulting from exposure to cold, excessive fatigue, etc., modify the resistant action of the ciliated epithelium of the bronchial tubes or increase the receptivity of the soil on which the germs finally rest. Once established in the air-cells the irritation produced by their presence gives rise to an exudation from the pulmonary capillaries.

It is upon this exudate that the germs thrive and are able to continue their work. It is believed that a toxin is produced by the action of the microbes, which, on being absorbed, poisons the system and gives rise to the manifestations of the disease.

In his able and exhaustive exposition of this subject in the Twentieth Century Practice, vol. xvi, to which all students are referred, Dr. Andrew H. Smith takes the ground that the condition in the lungs is simply a process of germ culture and cannot be properly described as an inflammation. On this latter point, however, he appears to be at variance with most other writers. The pathological condition developed in the lungs soon after the ingress of the microbes certainly answers to the classical conception of inflammation inculcated by Galen and his followers. We have the symptoms and signs of pain, heat, redness, and swelling, to which may be added alteration of function. There is a fibrinous exudation into the air-cells, with the emigration of leucocytes and the diapedesis of red corpuscles.

The occurrence of cellular proliferation is admitted by all writers on the subject. Finally, the fatty degeneration, softening, liquefaction, emulsification, and eventual removal of a large proportion of the exudate by the lymphatics also answer to the usual conception of inflammatory processes. While it is undoubtedly true, as Dr. Smith has stated, that the lesser or pulmonary circulation is chiefly concerned in this process, leaving the bronchial or nutrient circulation to continue its usual work of sustaining the lung tissue, it must not be forgotten that a certain proportion of the blood supplied by the latter channel is returned to the heart by the pulmonary veins, some of the smaller branches of which anastomose with the bronchial veins. Any interference with the pulmonary circulation is thus liable to give rise to bronchial catarrh of the smaller tubes, and this we undoubtedly have in croupous pneumonia. From the author's study of this subject, he would fully agree with Dr. Smith that the process is one of germ culture, but it may also be as properly described as an inflammation as are the conditions set up by the same microbe elsewhere, viz., in the pericardium, the pleura, and the joints. It is of course a special form of inflammation produced only by special forms of microorganism and not analogous to inflammations eleswhere, because the lung itself has no analogue elsewhere in the body.

It is possibly not a more peculiar inflammation than is that of acute atrophy of the liver, acute Bright's disease, or acute myelitis. There appear to be excellent reasons for the belief that sooner or later during the acute manifestations of pneumonia a principle is elaborated either by microbes themselves or through the agency of the leucocytes, which is capable of neutralizing the effects of the microbial toxin in the animal economy. It was discovered some years ago that the serum from the blood of animals suffering from pneumonia, taken after the crisis, gave temporary immunity to the disease when introduced into the circulation of healthy animals. The injection of cultures of pneumococci alone usually resulted in the development of pneumonia, but if the cocci were introduced into the lung together with the antipneumococcic serum the animal remained healthy.

Many investigators, led by the Klemperer brothers, have concluded that it is to the development of this antitoxin in the system that the phenomenon of defervescence by crisis is due.

Much activity has for several years been devoted to the production of an artificial antipneumotoxin which might be available for immunizing, or which, after the disease was contracted, might be introduced into the system in anticipation of the natural product, thus hastening the occurrence of crisis and cutting short the disease in an early stage. It is not intended here to enter into a critical analysis of the great mass of literature pertaining to this matter which has accrued. The most striking experiments have been those reported by the Klemperers, Foa, de Renzi, Pane, Mossny, Emmerich, Neisser, Washbourne, Weisbecker, and Fourriere.

The reports are generally encouraging, but by no means satisfactory. All observers admit the great difficulties attending the elaboration of an antitoxin of uniform strength and stability.

The most skillful and experienced pathological chemists, with every facility for scientific investigation, have not yet succeeded in standardizing a preparation. Bearing in mind, however, the brilliant results obtained in diphtheria, there is good reason to expect that a serum of equal potency in pneumonia may yet be produced. It is along these lines that our chief hope for future improvements in the management of the disease appears to rest. However, a practicable antipneumotoxin may still be far in the future.

A most important question for present consideration is this: "Has the discovery that acute lobar pneumonia is an infectious disease, and the probable identification of its pathogenic microbe, supplied us with a rational basis for new methods of treatment which may be employed by the practitioner at large?" A not inconsiderable group of writers take the affirmative side of this question. Dr. Andrew H. Smith (*op. cit.*), who may be regarded as the chief spokesman in English for those holding this view, takes the ground that a most important object of treatment in pneumonia consists in introducing into the patient's system substances which will render the blood an unfit medium for supplying a culture which will support the life of the diplococcus. There are many excellent reasons for adopting this view.

We have succeeded in practically aborting by this means the course of malaria, rheumatism, and syphilis. Then why not pneumonia? The excessive vulnerability of the Fränkel microbe is properly brought forward as an argument in this direction. It is justly claimed that this microbe is but a delicate and short-lived microphyte even under the most favorable circumstances. Its course is very easily cut short in artificial cultures. Attention is called to the fact that the entire volume of the blood must pass through the pulmonary or lesser circulation in the same time required for its passage through the systemic circulation. Hence, microbes having their habitat in the field of the pulmonary circulation are peculiarly exposed to the assault of antiseptic substances held in solution by the blood. The fact is also prominently brought forward that several of the most effective of the old-time remedies used in pneumonia possess antiseptic or germicidal properties, and that it was no doubt largely by virtue of this fact that these substances often proved useful. Chief among these drugs are calomel, quinine, chloroform, and the salicylates; to these creosote has more recently been added.

Let us consider a few points in the physiological action of these remedies, beginning with

Calomel.—This is a very insoluble powder, and when swallowed appears to run the gauntlet of the gastric juice unaffected, though some have believed that a small quantity might be converted into the bichloride of mercury by the action of the hydrochloric acid in the stomach. On reaching the intestine a small proportion is converted into the soluble albuminate of mercury and absorbed as such. In contact with the chlorides of the blood a very minute quantity of the albuminate is converted into the perchloride.

The great mass of the calomel, as well as other insoluble preparations of mercury, is thrown off unchanged in the stools, and it is for this reason that large doses of the drug are often taken with impunity. Calomel irritates the intestinal mucous membrane, increases peristaltic action, prevents decomposition of the intestinal contents, and may be regarded as an intestinal antiseptic. It also acts as a speedy and efficient diuretic, but its old-time alleged influence as a cholagogue has recently been shown to be fallacious by Stadelman (in animals) and by Pfaff (in man), who found that mercurial preparations had no influence on the secretion escaping from biliary fistulæ. Now it is proposed by those who believe in the antispetic treatment of pneumonia to administer at the very outset of the disease, or as soon as it is recognized, large doses of calomel, 20 to 60 grains, for the purpose of rendering the exudate in the lung derived from the blood an unfit food for sustaining the life of the microbes.

A most important question at once arises: Does enough of the mercurial pass into the blood to render it an antiseptic fluid, and unsuitable for nourishing the pneumococci?

Let us suppose that thirty grains of calomel is administered at one dose. What proportion of this enters the blood? It is said that five grains acts as efficiently on the bowels and on the kidneys as six or eight or ten times that quantity, and that even when a small dose is given much the greater portion is discharged from the bowels unchanged. Having no exact figures at hand, let us assume that of the thirty grains administered five grains finds its way into the circulation as the soluble albuminate. Here a small quantity, as before stated, is further converted into the perchloride, which, while beyond doubt the most effectual of the mercurial antiseptics, is a deadly poison to the human system. It is doubtful if a quantity larger than a third of a grain could be tolerated at one time. The entire quantity of human blood in the average adult male weighing 150 pounds has been estimated at eighteen pounds. It cannot be claimed, however, that the blood holds all of the mercurial in solution, for traces of it quickly appear in the urine, saliva, bile, and other fluids of the body. It must be confessed, then, that by the time the antiseptic reaches the micro-organisms which it is expected to destroy, or whose activity it is expected to inhibit, it is in an exceedingly attenuated form. Does it possess power enough to effect its purpose? This question has not yet been answered.

Quinine.—The influence of this substance on the blood has been most carefully studied by Binz, Jacquet, Rossbach, Gottlieb, Kerner, and Kirschner. It appears in the urine within a short time after its exhibition, and about half the quantity absorbed is excreted within six hours. Over 90 per cent. of the total amount ingested has been recovered unaltered in the urine, though Kerner found that a small quantity was partially hydrated in the tissues and excreted as dehydroxyl quinine. It is known that this drug exerts a powerful influence on protoplasm, consisting first of a transitory augmentation of its activity, followed by depression and death. It diminishes the movements of the white blood cells and effects some alteration in their shapes, and lessens their number. It inhibits the oxidizing influence of the blood, lessens acid fermentation, and is said to retard coagulation. Gastric and pancreatic ferments are rendered less active. It will thus be seen that this substance influences many, if not all, of the processes which normally occur in living matter. Quinine is further known to be entirely destructive of the plasmodium of malaria. Many old writers believed it to be a most valuable remedy in pneumonia, some attributing to it abortive influence if taken early. It is a powerful antiseptic, and it is said that in artificial cultures a one-per-cent. solution is fatal to Fränkel's diplococcus in five minutes. A most important question which remains unanswered relates to its influence on this microbe in the living body. Does it disqualify the blood for supplying a culture suitable for the sustenance of these organisms, or is it directly destructive to the diplococcus as in the case of malarial germs?

Salicylic Acid.—This substance circulates in the blood as the salicylate of the alkalies. It is excreted by the kidneys for the most part in a combination with glycocoll known as salicyluric acid, analogous to hippuric acid. It has also been found in the milk, perspiration, and bile. The salicylate of sodium has been used in pneumonia for a number of years. Two very striking reports of its action in this disease appear in recent medical literature, viz., that of R. Liegel (*Wien. Med. Woch.*, May 7, 1898), quoted by Dr. Smith, and that of Dr. Sebring, of Kingston, N. Y. (*Medical Record*, April 22, 1899). According to Liegel seventy-two cases were treated among mining operatives with large doses of sodium salicylate—120 grains daily, or 10 grains every two hours. Some of these cases were exceedingly unfavorable, occurring in persons of intemperate habits and two of the patients were over 70 years of age. Not a single death occurred among these cases. A number of typical recrudescences were noted, but were easily controlled by the same agent. Dr. Sebring treated seventy-five cases of pneumonia with salicylate of sodium in the same dosage and lost but one. Four of the patients were over 80, one being 84, and a habitual drunkard. There were also several cases of mitral and other valvular cardiac lesions. The patient who died was a plethoric woman who had been troubled with cardiac syncope for a long time before developing pneumonia. Almost all the cases were severe. Sebring states that other cases of pneumonia occurring at the same time and in the same territory, but treated by other methods, frequently resulted fatally. Of 125 cases treated by other physicians with salicylate of sodium, only one died. If this salt shall prove so efficient in the hands of others as in those of the reporters above cited, we may feel sure that a specific for pneumonia has been found, and the disease will soon be robbed of its terrors. No other observers, however, appear to have used the drug so extensively. A few scattering reports are found in recent medical literature, but they refer to experience with but few cases. The writer has ventured to use the drug tentatively in several instances, but beyond a slight lowering of the temperature and increased expectoration no influence over the usual course of the disease was manifested. It is known that the salicylates are very effective antiseptics and that they exert something like a specific influence in acute articular rheumatism, which is now believed to be an infectious disease.

We have now to settle the questions, Can it be relied upon to the same extent in pneumonia? Is it as inimical to the microbe of that disease as it is to the morbific influence, whatever it may be, which gives rise to the phenomena observed in rheumatism? As far as the author can learn no researches whatever have been made which tend directly to show that the salicylates exert any influence whatever upon the pneumococcus in the living body.

Chloroform.—This substance has been used for years in the treatment of pneumonia on account of its sedative action upon the nervous system and its anticoagulating influence on the blood. It is a valuable adjunct to cough mixtures whether in pneumonia or bronchitis. When given by inhalation its fumes are undoubtedly brought into close contact with the pneumococci, if used early in the disease before the smaller bronchi are blocked by the exudate. Whether or not it inhibits these germs, destroys them, or prevents their future depredations, is so far a matter of speculation, as no satisfactory evidence has been brought forward to prove this.

Creosote.—This substance, which is known to be a powerful antiseptic, has also been proposed in the treatment of pneumonia. It is excreted very largely by the lungs, and is thus brought into direct contact with the pneumonic process. Creosote has been recommended for many years as a remedy in phthisis pulmonalis, but it was long since discovered that it possessed no apparent influence upon Koch's bacillus. Whatever action it may have in modifying the course of pulmonary tuberculosis must be attributed to its effect upon general nutrition, or to its influence upon the phthisical expectoration. Data indicating that it affects the pneumonic microbes in the body are so far entirely lacking, and the same may be said of carbolic acid, another proposed remedy.

It strikes the writer that the following conclusions are forced upon the mind of the conservative observer after a careful survey of this field: (1) The discovery that pneumonia is an infectious disease and the recognition of its pathogenic microbe increase the hope that an abortive or specific form of medication will be brought to light. (2) Recent research strongly indicates that our chief reliance for an improvement in our present methods of treatment rests in the elaboration of a satisfactory form of antitoxin. (3) The use of antiseptics for the destruction of pathogenic microbes in the tissues is very limited. Pathological chemists as well as clinical observers now recognize the hopelessness of attempting to discover any single body which will destroy all forms of bacteria in the system while leaving the host unimpaired. The discovery of specific remedies for several diseases, however, shows that certain agents act more powerfully upon the cause of disease than upon the tissues of the patient, and inspires the hope that the list of conditions thus yielding to specific medication may be extended. (4) Coming to the consideration of pneumonia, however, it must be confessed that little actual progress has been made in this direction. It would appear that the field has not yet been sufficiently traversed by the pathologist and the chemist to light the way for the clinician. Several facts in connection with the natural history of the micro-organisms concerned in the disease still require elucidation, and we should have fuller information concerning the antiseptic solutions and the strength of the same required to exterminate the microbe before we can proceed intelligently or safely.

In the treatment of pneumonia we should ever bear in mind that it is a self-limited disease, and that its invariable tendency is to recovery, provided we can keep the patient alive a few days. While therefore the author believes that in favorable cases we may cautiously test the new germicidal remedies, this should not, with our present knowledge, involve a wide departure from an intelligent expectant form of treatment, which taken as a whole has resulted in a far less mortality-rate than attempts to jugulate or abort the disease.

36 East 29th Street, New York.

CAN WE REALLY SEE WITH OUR EYES OR THE BRAIN?

By J. WATERLOO DINSDALE, M.D.

Man does not see really with his eyes. The eyes are only an instrument for receiving images which are conveyed to the center of perception in the brain by the optic nerve.

The blind man who perceives the size, shape and nature of an object with his hands sees to a limited sense.

If man had evolved without eyes, but with all his present brain power, he would doubtless be able to see by some other method. Some of the lower animals have no eyes, but perceive light through their whole bodies.

Now, if an image of material objects can be conveyed to the brain by some other agency than the eyes, it follows that a blind man who has a sound mind will be able to see perfectly well. An image is gathered on a screen instead of on the retina of the eye and is conveyed directly by an electric current to the brain; such a use has already been foreshadowed in the process well known to science as cataphoresis.

By this it is possible to convey medicines, anesthetics and other substances into the interior of a man's body without his being aware of it. By its aid cocaine can be sent through the solid bone, conveying insensibility to nerves or marrow.

I may point out to you that the mere fact that we can see images in our dreams in the dark and with our eyes closed is proof of the possibility of seeing without eyes, as we at the present understand them. How great are the difficulties which must be overcome before the power of seeing can be restored to those who have lost it, or before it can be bestowed upon those who were born blind, can be better appreciated when the mechanism of sight is explained.

For the purpose of this explanation only the actual eye need be considered; the eyelids and other protective surroundings of the eye can be conveniently omitted from discussion.

The human eye may be said to consist of an outer transparent part called the cornea; the colored part of the eye is known as the iris; the black spot in the middle is popularly known as the pupil. It is really the adjustable hole in the iris which lets the light pass to the lens of the eye. The interior of the eye is filled with what is called the vitreous humor; it consists of a soft jelly-like substance; its use is to give the proper distention to the globe of the eye. At the very back of the eyeball is what is known as the retina, this is the part upon which is received the picture presented before the eye; it communicates directly with the optic nerve and is believed to be formed by the outspread fibers of this nerve.

The best understanding of the mechanism can probably be obtained by comparing it to the simplest form of camera; such a camera usually consists of a box painted black inside with a hole in front for the admission of a lens and a ground glass plate at the back on which the photographer can see the picture he is about to take. In the human eye the convex lens of the camera has its counterpart in the crystalline lens which lies just back of the iris. The dark box is represented by the eyeball and the ground glass screen by the retina. In the case of the cornea the screen is enabled to receive clear images of objects at different distances by being shifted forward and back. The lens can also be screwed in or out. The human eye accomplishes these things automatically, altering the size of the opening of the iris and by changing the shape of the crystalline lens.

Such, then, are the essential parts of the human eye, but they are by no means all that are necessary to the operation which mankind calls seeing. As a matter of fact the brain has as much, if not more, to do with sight than any other part of the eye itself.

Photographers know that when they look at the reflected glass of a camera they see it upside down. The human eye works in exactly the same way, and we too see things upside down, but an unconscious act of the brain makes it appear right side up. In the same way the brain acts as an interpreter for the eye when such a matter as size, speed and solidity are presented to it.

When we gauge speed of a train, a bird or a horse by what we call sight, it is an operation of the brain rather than of the eye which enables us to estimate the speed. We judge motion of an object partly from the motion of its image over the field of the retina and partly from the brain's appreciation of the muscular effort exerted by the eye in following the object.

How we see is still practically a matter of conjecture. Hitherto it has been accepted as a law that sight was impossible without the existence of an eye in active communication with the brain. The two have been regarded as interdependent.

The following then, may be said to be the way in which the eye works in seeing: The scattered rays of light reflected from the surface of any object upon which the eye is fixed are received upon the cornea and there gathered together and passed on to the lens. If the light is too strong the hole in the iris contracts so as to admit less light to the interior of the eye. The lens of the eye is automatically growing thicker or thinner until the object is correctly focussed upon the retina, that operation is instantaneous.

The optic nerve which is attached to the retina then carries the impression of the picture straight to the back of the head at the top of the spine where lies the medulla oblongata. This organ can be aptly compared to a telephone station at which sits an operator ready to make connections with any other part of the system. When the picture or impression carried by the optic nerve arrives at the medulla it is instantly switched over to the front of the head where lies the intellectual centers. These interpret the picture and if necessary pass on to other centers impulses necessary for the completion of any act which the picture presented to the mind seems to require.

432 E. 47th St., Chicago, Ill.

PITHY, PUNGENT AND POINTED PARAGRAPHS,

Reprinted for the Perusal of Physicians Whose
Particular Penchant is Pertinent Prose.

NERVOUS DYSPEPSIA.

Boardman Reed, in the *International Medical Magazine* for January, 1900, says that conceptions of this disorder have been as varied as the authors who have written upon it. In probably one-half the cases there is actual structural change in the gastrointestinal tract. It may also be associated with organic changes in other organs, in which case the term should not be used. Gastric disturbances are common in general neurasthenia, and occasionally neurasthenic symptoms seem to be limited to the stomach. The term should be strictly limited to the apparently causeless dyspepsias and these are closely associated with neurasthenia. A symptom of importance in diagnosticating the condition is a lack of relation between the amount of indigestion and the quantity of food taken. The true nervous dyspeptic often complains as much after eating plain bread and butter or beefsteak as after a mixed meal. The diagnosis must be largely by exclusion, and it is often difficult to distinguish between these cases and catarrh, ulcer, and incipient cancer. The disease is generally curable, if uncomplicated. In its treatment the Weir Mitchell rest cure is often valuable, but it is important that this should be followed by a complete change in habit and the substitution of an outdoor active life for a sedentary one. These cases call for a regulation of the diet, which should be nutritious. The drug treatment should be the same as that generally employed in neurasthenia.

A CASE OF PSEUDODIPHTHERIA.

F. L. Stillman, in the *Columbus Medical Journal* of December 5, 1899, describes the case of a young man 22 years of age, who, previous to coming under observation, had good health with the exception of recurrent attacks of tonsilitis. He was a volunteer in the late war with Spain, and had an attack of malaria alternating with occasional diarrheic seizures. Upon examination the symptoms were not marked. There was slight elevation of temperature, the breath had a sweetish, disagreeable odor, and the tongue was covered with a thin white coating. The tonsillar crypts were enlarged, containing some yellowish débris. On the left tonsil was a whitish pseudomembrane covering two-thirds of its surface. At first the membrane was furfuraceous and was not easily removed. The underlying surface bled easily, and the entire tonsil was red and swollen. On the gum and cheek of the left side, near the wisdom tooth, was a membrane of similar character. An examination was made at once for the Klebs-Loeffler bacillus, but was negative. The following day a membrane appeared on the right tonsil similar in character to the other membrane. The treatment consisted of a spray of corrosive sublimate, 1 to 2000, and frequent gargling with a moderately strong solution of permanganate of potassium. After two days salicylate of sodium was given internally, and was then changed to iron. At the end of a week he was no better; in fact, the membrane on the right side had extended. A culture made at this time from the membrane covering the left gum showed the streptococcus exclusively. The exudate on the right side showed staphylococci in practically pure culture. Examination of the fresh blood, without fixing or staining, showed crenated disks, and the red cells were unusually pale. There were no plasmodia nor pigment granules. Leucocytosis was not present, and the total number of red cells exceeded five million. The duration of the disease was three weeks.

Chemical Preservatives in Food.—A. G. R. Fullerton (*The Lancet*, Dec. 9, 1899) says that the common practice of preserving milk by formaldehyde and boric acid should be prohibited by law. Not that the quantity of the disinfectants is sufficient in the majority of cases to disturb the adult digestion, yet it may do so in the case of infants and invalids. The necessity for legislation on this question lies in the fact that these preservatives are, in the quantities used, tasteless and so cannot be detected by the consumer. If preserved milk could be distinguished from fresh milk as readily as salted beef can be distinguished from fresh beef no necessity for legislation would arise. The consumer would know exactly the kind of article he was buying, and there the matter would end. There would then be no reason for prohibiting the sale of preserved milk any more than there would be for prohibiting the sale of salted beef on the ground that the latter was not suitable for making beef tea for invalids. As the public has no means of distinguishing between fresh and preserved milk, special legislation seems necessary. The sale of preserved milk as fresh milk should be prohibited by severe penalty.—Exchange.

Santonin in the Treatment of Epilepsy.—G. Frank Lydston, in the *Therapeutic Gazette* of February 15, 1900, says that a substitute for bromides in the treatment of epilepsy is needed. He believes that this has been found in santonin, which he has used for nearly twenty years in the treatment of this affection. His attention was first directed to santonin as of possible value in the treatment of epilepsy by the fact that it is a valuable antispasmodic in children. He does not claim that it is a specific for epilepsy, nor is he sure that permanent cures have been produced. All that he claims for the remedy is that under it the average epileptic patient shows better results than under the bromides. Santonin acts well in cases in which the bromides for one reason or another are not tolerated. It has proved of especial value in those cases in which the bromides failed. It does not cause mental hebetude, nervous or circulatory disturbances, nor disfiguring eruptions. In adults he begins with a dose of from two to five grains of the powdered drug, which is gradually increased to the point of tolerance. Many patients take twenty grains three times a day for some weeks. The point of saturation of the system is shown by a yellow color of the urine and a varying degree of renal and vesical irritation. He has never given more than twenty grains, but does not know what the limit of the dose of santonin is. He advises caution in giving the drug, to begin with small doses gradually increased.

LUMBAR INJECTION OF COCAINE.—Recently several major operations have been performed under the partial anesthesia obtained by the injection of a solution of cocaine beneath the lumbar arachnoid. Lumbar puncture performed for diagnostic or therapeutic purposes is absolutely harmless, now anesthesia of the pelvis and lower extremities is produced by a somewhat similar technique. The patient is placed on his side, the legs being flexed on the thighs and the thighs on the pelvis in order to separate the laminæ of the lumbar vertebræ. The space between the last lumbar vertebra and the sacrum is the preferred region, but that between the fourth and fifth lumbar answers well. A small trocar or stiff needle about 10 cm. long is used. The instrument, field of operation, and hands of the operator are thoroughly cleansed: then the needle is boldly directed toward the median line, and the solution is slowly injected. In the adult it generally requires 1 cg. of cocaine in solution in one or more centigrams of water to produce anesthesia. If the operation is prolonged, the injection may be repeated. Anesthesia is produced in from five to ten minutes. While headache, nausea, and vomiting which are of short duration, sometimes occur, no cardiac or respiratory symptoms have as yet been noted.

ALCOHOL AS A GENERAL STIMULANT AND HEART TONIC; ITS USE TO THE ANIMAL ECONOMY IN HEALTH AND DISEASE.—T. J. Hillis believes that alcohol should never be given in lingering diseases, nor in convalescence from acute diseases, if it irritates or upsets the stomach. Alcohol should never be taken after eating. It cannot aid digestion, and so must retard it by its weight and bulk. Further, is precipitates the digestive ferments, coagulates the albuminoids, and often completely arrests the digestive process. The amount to be consumed varies with the individual and the circumstances. Alcohol is a form of food already digested, but it is not adapted to the normal wants of the body, and is indicated only at a time and under conditions which render the digestion and assimilation of other foods impossible.—Exchange.

INFLAMMATION OF THE APPENDIX IN GIRLS AND WOMEN.—Mr. J. Bland-Sutton, F.R.C.S. (*Clinical Journal*, March 14th), in reference to the former belief that inflammation of the appendix was almost peculiar to men, points out that accurate observations show that the ratio of its presence in women to that in men is as 1 to 3. He records twenty consecutive cases in which he removed the appendix from women in eighteen months. The intimate relations which the healthy as well as the diseased appendix has with the ovary and ovarian and parovarian cysts make it of special interest to the pelvic surgeon. It is a well-ascertained fact that the vermiform appendix not infrequently leans over the brim of the pelvis in the situation occupied by the right ovary. In such circumstances it would follow that a seriously inflamed appendix might become adherent to the ovary. On the other hand, an inflamed ovary or Fallopian tube might involve the vermiform appendix. The position of the appendix on the brim of the pelvis, moreover, occasionally brings it in contact with the pedicle left after an ovariotomy or oophorectomy. The part played by "bacterial masses" in causing concretions in the appendix as well as gallstones is referred to, and the author concludes: A careful study of appendicitis in women demonstrates that the clinical aspects of this disease are even more protean than in men. In those women vaguely classed as hysterical, neurotic, or neurasthenic, who complain of indefinite pain in the pelvis, often ascribed to ovarian trouble, the source of the misery is, in a fair proportion of instances, chronic appendicitis.

Denuding the Skin with Caustic Potash in Vaccination—Frank S. Fielder, in the *Medical Record* of January 27, 1900, says that this method of denudation is less terrifying in children. It has an advantage over scarification, in the fact that no blood is drawn. The disadvantages are that it takes more time and it is difficult by this method to denude a small place; the vesicles are likely to be too large if the virus is very active. It is less certain than scarification, no matter how skilfully done, because of the formation of an eschar which interferes with absorption. He believes that this method of denudation is impracticable in wholesale vaccination. It may have some value in private practice in the case of a nervous child where it is necessary to avoid terrifying; in this way he may be spared the slight pain caused by scarification.—Exchange.

Ipecac in Metrorrhagia.—The fact that small doses of ipecac have a favorable influence in arresting and preventing hæmoptysis induced Onimus to apply the same treatment to metrorrhagia, and he recently announced at the Paris Société de Biologie that he had found it remarkably effective.—*Journal Amer. Med. Association.*

The Treatment of Whooping-Cough.—Henry Coggeshall first cocainizes as much of the nasal mucous membrane as can be done by the use of a spray, followed by cotton-tipped probes wet with the solution; then an application of a two- or a four-per-cent. solution of nitrate of silver to the nose and naso-pharynx, to be followed by a mild alkaline and antiseptic wash by spray or by post-nasal douching. He also speaks of belladonna and suprarenal extract.—Exchange.

Burns.—Recent investigations seem to have proved that powdered pepsin dusted upon burns of the third degree is a valuable remedy, promoting granulation, and, better than this, preventing the formation of scar-tissue.—*Journal of Medicine and Science.*

A Case of Pneumohydrothorax with Great Permanent Displacement of the Heart.—Charles Ross Jackson quotes the case of a young man, seventeen years of age, in whom the cardiac impulse is present in the right fifth intercostal space in the nipple line. Dullness extends almost from the nipple line to about the right sternal border and upward to the third space. The past history is of a pain in the chest, which began about a year ago and became chronic. In an acute attack which followed, the perforation probably occurred, and pneumothorax developed. Creosote and tonics ameliorated these symptoms. The prognosis is unfavorable.—*Med. Record.*

Arsenic in the Thyroid.—M. Gautier claims (*Chem. and Drug.*) to have discovered traces of arsenic in the thyroid and thymus glands, and also in the skin both of men and of animals. This he regards as a normal constituent of these organs. The fact that only 1 milligramme was obtained from 127 grammes of thyroid gland would make one think the arsenic as being in all probability derived from the reagents, but the fact that no trace was discovered in the liver, blood or muscles discounts this supposition.

The Constituents of Ergot.—According to Dr. Meulenhoff (*Pharm. Post*, 1900, 22), sphacelic acid is the active principle of ergot upon which most of its action depends. To ergotinin and an unnamed alkaloid a certain amount of virtue is ascribed. Ecbolin, ergotin, cornutin, and ergotinic acid do not appear to possess especial importance.

Toxins from a Chemical and Pathological Standpoint.—A. E. Austin quotes Gautier's description of the nature of toxins: "All infectious microbes act upon the organism by the poisonous products or toxins which they secrete. These poisonous products are chemical substances susceptible of filtration, precipitation, and resolution. These toxins are usually complex, made up of an alkaloidal material and a nitrogenous substance, which is very active. The primary effect of all these toxins is rise of temperature, and probably all fever is produced by the agency of some one of them." Austin then gives several methods of extraction.—Exchange.

Vertical Headache.—For the flushings and vertical headaches of women Dr. Bulkley prescribes:

℞	Diluted nitric acid.....	f ʒ j
	Water..	f ℥ ij

M. Sig.: Teaspoonful in a wineglassful of water three times a day.—*Merck's Archives.*

Treatment of Chronic Eczema.—Chapin (*Post-Graduate*, September, 1899) prefers to all of the many salves used in the treatment of chronic eczema that known as Lassar's paste. This consists of salicylic acid 1 part, zinc oxide 25 parts, starch 25 parts, and vaselin 50 parts. In infants with very tender skins this is used in half strength. It is well rubbed into the skin, after which a bandage is applied over the affected part. Scabs and crusts are first removed by sweet oil compresses.—Exchange.

DISINFECTION OF THE HANDS.—Abbott "Hygiene of Transmissible Diseases, 1899," concerning disinfection of the hands, writes as follows: Of the numerous methods recommended only two will be given as thoroughly trustworthy, viz., that of Furbringer and that of Welch, developed at the Johns Hopkins Hospital. Furbinger's Method—(1) Remove all dirt under and around nails. (2) Brush nails and skin of hands thoroughly with soap and hot water. (3) Immerse in alcohol, 95 per cent., for not less than a minute, and before this evaporates. (4) Plunge the hands in 1:500 corrosive sublimate or three per cent. carbolic acid solution, and thoroughly wash them for at least a minute, after which the hands may be rinsed in warm water and dried. Welch's Method.—(1) The hands and nails are to be thoroughly cleansed with hot water and soap. The water is to be as hot as can be borne, and the brush used is to have been sterilized with steam, this preliminary brushing to occupy from three to five minutes. (2) The hands are then rinsed in clean warm water. (3) They are then immersed for one or two minutes in a warm saturated solution of potassium permanganate. While in this solution they are rubbed thoroughly with a sterilized swab of absorbent cotton. (4) They are then placed in a warm saturated solution of oxalic acid, and kept there until completely decolorized. (5) They are then thoroughly washed in clean sterilized water or salt solution. (6) Finally, they are immersed for two minutes in 1:500 corrosive sublimate solution, rinsed in water, and dried. —*Phila. Medical Journal.*

THE SURGICAL TREATMENT OF GONORRHEAL ARTHRITIS.—O'Conor (*The Lancet,* Dec. 9, 1899), as a further contribution to a study of this subject, contributes brief reports of ten cases treated by arthrotomy. He states that since the early part of 1897 he has practiced arthrotomy with irrigation and drainage in all cases of this malady which have come to him for treatment; that he cannot too strongly advise this procedure as a means of saving the joint structures from prolonged immersion in a particularly destructive exudate. In not a single instance did sepsis supervene, nor were any relapses noted. The joints after treatment remained normal in contour and function. The course of the cases is fully illustrated by the following report: The patient was admitted to the hospital on March 19, 1897, suffering from chronic gonorrhea with arthritis of the right knee. After a prolonged and useless expectant treatment arthrotomy was performed on June 13. One ounce of turbid serum and a piece of thickened synovial membrane were removed. The patient was discharged cured on July 12.—*Therapeutic Gazette.*

GAILLARD'S MEDICAL JOURNAL.

VOL. LXXII. NEW YORK, JUNE, 1900. No. 6

CLINICAL MICROSCOPY IN DISEASES OF THE RESPIRATORY ORGANS.*

By H. STUART MACLEAN, M.D., Richmond, Va.,
Lecturer on Bacteriology and Physical Diagnosis; Director of Microscopical Laboratories, University College of Medicine; Bacteriologist and Hematologist to St. Luke's and Virginia Hospitals, etc.

The past few years have greatly enhanced our knowledge of laboratory and microscopical methods for the diagnosis of diseases. Some of our older physicians can recall the time when the microscope was a rarity even in the colleges, and a microscope in the office of a physician was simply a means of whiling away leisure hours by (usually) botanical study. Since that time, however, year by year, a mass of evidence has been accumulated by laboratory workers and clinicians in all departments, and facts have been adduced which through experience have come to be recognized as of reliable diagnostic or prognostic value. Like everything "new," clinical microscopy has been injured by enthusiasts, who have either through inexperience, immature observations and judgment, or incorrect deductions, claimed that which could not be substantiated nor fulfilled. Practicing physicians having to form their opinions from the current literature on the subject have thus been misled, and once this having occurred they have perhaps been slow to accept that which *can* be proven and often would be helpful. In diseases of the respiratory organs clinical microscopy has been more uniformly resorted to and useful than anywhere else; and under this heading we wish to consider briefly some of the more important conditions in which it is of value.

The usual examination of the secretions from the air passages is limited to the detection of some specific form of micro-organism. This is usually all that is necessary, but at times, in stopping here, information is lost which might be of material value. It would therefore be urged that more attention be paid to other constituents, such as elastic fibres, pigmented epithelial cells, crystals, spirals, etc., as well as to the gross characteristics of the material. For instance, we recognize that purulent sputum has a characteristic color, but it is possible that a green tinge may be imparted by bacterial pigments or biliary coloring matter.

So, too, the odor and the general appearance of the sputum may have considerable significance. These points, however, would be included more properly in a paper upon the sputum alone, so will be passed over here.

---

*Read before the Richmond Academy of Medicine and Surgery, Apr. 10, 1900.

Pneumonia.—The sputum in pneumonia is often supposed to be of a characteristic color and consistency. This, however, is not always so; and a diagnosis based to any extent on the presence or absence of rusty colored or prune-juice sputum is liable to considerable amendment. In this disease we have an instance where too much has been expected of a microscopical examination, for the disease cannot always be diagnosed on examination of the sputum alone by our present knowledge and methods. Yet an examination will usually be of great value, and the presence of the pneumococci in any number is strong evidence, especially if the other clinical symptoms are at all suggestive. It is well known that pneumonia, in a certain proportion of cases, is not easy to diagnose, and if the pneumococci can be found it is a material point gained.

In examining rusty sputum one is not infrequently surprised to note that there are comparatively few red blood corpuscles. This has been explained, however, by Traube, who showed that the color was largely due to the presence of dissolved hemoglobin. This red color may change quite rapidly to one of grass green, which has been claimed by Nothnagel to be due to the conversion of the coloring matter of the blood into biliverdin. In this disease we not infrequently obtain valuable aid from a blood examination. There is always an increase in the white corpuscles (or leucocytosis), which commences with the chill and lasts until a short time *after* the fever has disappeared, whether that be by crisis or lysis. In cases where a pseudo-crisis occurs the leucocytosis remains high, while in event of true crisis the number of leucocytes *begins* to fall a few hours *before* it. The existence of leucocytosis in an obscure case may afford a clue to the real condition. Last summer, at the request of Dr. W. S. Gordon, the writer examined the blood of one of his patients. The case was an obscure one with a history of indisposition for some days, recent chill and high fever. The patient had been confined about six weeks previous and there was some tenderness in one breast. She had just arrived in Richmond, and it was difficult to say whether the case was one of typhoid fever or malaria. A blood examination failed to reveal any malarial parasites, and at the same time a considerable increase in the number of leucocytes was observed. This latter excluded both malaria and typhoid fever unless they were complicated by some other disease, and the probability of the existence of a commencing suppuration or pneumonia was suggested. The following day many symptoms of pneumonia developed, and the case ultimately ran the typical course of that disease. The examination of the blood may also be of decided prognostic value, for it has been repeatedly demonstrated that the absence of leucocytosis almost always indicates a fatal termination. Another unfavorable symptom found in the blood is the presence of the pneumococcus, the majority of such cases terminating fatally, death not infrequently being preceded by gangrene of the lung.

Asthma.—In the expectorations of this disease are found long spiral bodies, apparently fibrinous threads twisted loosely around a faint central fibre. They are said to occur only in the bronchial form of asthma and are to that extent of diagnostic value. They are occasionally found in pneumonia, acute bronchitis and tuberculosis, and are supposed to be formed in the small bronchioles by twisting of the mucus threads. Indeed they have been experimentally produced by twisting mucus shreds on their long axis. There are also found crystals, commonly known as Charcot-Leyden's crystals, which while found in large numbers during the paroxysm are likewise to be seen at all times in the bronchial expectoration of asthmatics. They are probably derived in some way from mucin, as has been demonstrated by V. Jaksch, and they are noticed to be formed in and around the spirals after allowing sputum, in which they were not at first noticed, to stand for a few hours.

These crystals are sharply pointed, octohedral in shape and vary very much in size, being found as large as 50 microns in length. They are found in the grayish-yellow masses expectorated during a paroxysm. There also is noticed in the sputum one form of leucocyte, the eosinophile, in very large numbers. This cell differs from the other white corpuscles chiefly in having relatively large granules, which have a peculiar affinity for acid stains as eosin, etc. In a properly stained specimen will be noticed these sharply stained leucocytes, far in excess of the number usually present in sputum or pus; while throughout the field will be seen other leucocytes (neutrophiles) and many of the eosinophilic granules which have escaped from the cells and appear like brightly stained spores.

It will be seen, therefore, that a microscopical examination may be of considerable value in asthma, and it is well to be familiar with the points to be looked for and the information to be gained.

Tuberculosis.—There probably is no one disease in which a microscopical diagnosis is so often sought as tuberculosis. While a physical examination usually will make a diagnosis, we are forced to admit that in a certain number of cases presenting all or nearly all the physical signs of tuberculosis, negative examinations of the sputum have decided against such a diagnosis, and the further cause of the disease has demonstrated the microscope to be correct. Within the past year or so, the writer has reported negatively on at least six specimens of sputum from cases in which a diagnosis of tuberculosis had been made from the physical signs, and in every case the subsequent history has demonstrated the absence of tuberculosis. Some of these cases had made every preparation to remove to another climate, so strongly suggestive were the physical signs.

The great value of a microscopical diagnosis in this disease lies in making it *early*. Usually, if the case has progressed so far as to allow of a positive diagnosis on the physical signs alone, it has become hopeless. The aid of the microscope should be sought when the physical signs are simply suggestive; if a cough is not disappearing quickly enough after pneumonia; a little dullness or bronchovesicular breathing, perhaps a few moist râles, in other words when the case is only a "bronchitis" which, for some unknown reason, will not yield to appropriate treatment. If this was the usual custom it would save many cases. After so much grippe and pneumonia as has prevailed here this winter, we will see many such cases of persistent bronchitis refusing to respond to treatment, and a prompt microscopical examination may detect the tubercle bacilli long before the physical signs have developed sufficiently to base a diagnosis upon and the patient's life saved.

In examining sputum for tubercle bacilli, there are certain points always to be borne in mind:

1. The sputum should be coughed up, not simply cleared from the throat (unless the case be one of laryngeal tuberculosis). Disregard for this point is not infrequently the cause of failure to make diagnosis and consequent discredit upon the method.

2. While a positive diagnosis may be made on the first slide, yet it is another matter to make a negative one. A large number of slides should be prepared and carefully searched, the fact that the sputum is from the lung ascertained, and even then it is wise to ask for a second, and often third, specimen.

3. In cases where the bacilli are few in number, or not found at first, it is often of service to place the sputum in the incubator for 18 to 24 hours. This increases their number and renders their detection proportionately easier. The bacilli may also be separated by boiling with caustic soda, allowing to stand for a time, then examining the sediment, or by using the centrifuge.

The number of bacilli present are, in a way, a measure of the extent of the disease, many bacilli meaning a widespread involvement and particularly rapid progress. At the same time, there is no accurate method of estimating this point by counting the bacteria, although much work has been done along this line. It is likewise claimed that the bacilli increase or diminish as the fever is high or low. While all these facts have as yet no actual diagnostic or prognostic value, yet it is hoped that the results of patient, repeated observation will in time produce more tangible and practically applicable methods.

In tubercular sputum are often found fibres of elastic tissue derived from the lung substance. It is indicative of destruction of lung tissue and a more or less advanced stage of the disease. They occur in any condition of the lung in which breaking down of the parenchyma occurs, such as gangrenous pneumonia, abscess, bronchiectasis, and are readily discovered by examining the sputum without any preparation in the way of fixing or staining. Their occurrence, therefore, with tubercle bacilli denotes that the disease has advanced to the stage of cavity formation. It should be borne in mind that in acute miliary tuberculosis the bacilli may be especially scanty, or even at times absent from the sputum. The blood examination in pulmonary tuberculosis is remarkable for the absence of any material changes. Especially in the advanced stages one would expect, from the accompanying pallor and the wasting nature of the disease, that the red corpuscles would be diminished, but this rarely, if ever, occurs. They remain normal, or are even increased. The white corpuscles are likewise seldom influenced except when there is considerable cavity formation—then leucocytosis usually appears. Holmes, of Denver (*N. Y. Med. Jour.*, Sept. 5, 1896), has announced certain changes which he claims occur regularly in the leucocytes in tuberculosis, but his studies have not been fully corroborated.

Influenza.—In influenza a microscopical examination may be used as a means of diagnosis, the specific bacillus of Pfeiffer being found in all cases. Only in cases where there is a question of differential diagnosis is it necessary, however, as the disease is usually easily recognized from the symptoms.

Diphtheria.—The value of a microscopical diagnosis in this disease is fully recognized and more universally resorted to. It has resulted in recognizing many cases as diphtheritic which have hitherto not been considered as such, with the result that the danger of infection and consequently the number of cases have been greatly lessened. This diagnosis is made by making a culture on blood serum from the throat and examining the growth obtained after 15 to 24 hours in the incubator at body temperature. Some physicians hazard a diagnosis from an examination of the material obtained from the throat without cultivation, and this may usually be relied upon providing the result be confirmatory; but a negative result should not be accepted without applying the further rest of cultivation. Microscopical diagnosis is at times not used as promptly as it might be, because of the difficulty in getting a sterilized swab and a culture tube. This is not absolutely necessary, and a swab can be prepared by wrapping some sterilized absorbent cotton on a clean stick, and after carefully wiping the patch in the throat with this it may be placed in a clean test-tube previously prepared by passing through the flame and allowing to cool. The swab can thus be sent to a bacteriologist, and even 10 or 12 hours of express or mail transportation will not materially influence the result of the examination.

These are some of the more important features recognized. Many of secondary importance, such as the detection of pigmented epithelial cells found in the sputum in mitral disease, crystals of hematoidin, cholesterin and oxalate of lime, or the examination of pleuritic effusions for tubercle bacilli and other bacteria have been purposely omitted to shorten the paper. In closing it will not be amiss to revert again to perhaps the most important subject mentioned—the urgent necessity for early examination of the sputum in cases of "persistent cough" and similar conditions. The result may well repay for the trouble by saving the patient's life.

422 W. Main street.

PLACENTA PREVIA.

By HUGH HENDRIXSON, M.D.

Dystocia in the puerpera has always been of peculiar interest to obstetricians. Whether maternal, fetal, or placental, it often calls for promptness in action guided by quick discernment and good judgment.

In presenting the subject of placenta previa for our study at this hour I am sure I do not bring to you a hackneyed or wornout subject. Professor Hirst in his late work on obstetrics says statistics show that placenta previa occurs 1 in 50 to 1 in 1,564 pregnancies, and believes the average about 1 in 1,200. In his own experience it occurred once in 300 cases. In the experience of the writer about once in 457 pregnancies.

The term placenta previa was doubtless suggested by the fact, in some cases at least, that the placenta first presents itself to the examining finger; or may be felt emerging in front of the child in accouchement.

Whatever may be our theories of its etiology, when we speak of placenta previa we mean that the placenta is situated somewhere in the lower zone of the uterine cavity, and where laceration is almost inevitable during labor at any period of gestation.

As early as 1609, Guillemau recognized a misplaced placenta but regarded it as an accidental prolapsus. In 1685 Portal described it more correctly. In 1700 Schaller demonstrated it while dissecting a body. In 1789 Rigby described placenta previa—a placenta attached to that part of the womb which always expands most in gestation and dilates most as labor advances.

It is to Rigby we owe the term "unavoidable hemorrhage." It was he who pointed out the difference between accidental hemorrhage and hemorrhage occurring in placenta previa.

The etiology of placenta previa has never been positively demonstrated; yet we sometimes do well in discussing such abnormalities to refer to their supposed cause. I may then be pardoned if I, with Dr. Edward P. Davis, infer that the probable causes may be a relaxed uterus or a diseased state of its mucosa, uterine myomata, malformations, neoplasms, etc. Or, I may with Hofmeier and Kaltenbach, Costa and Robin, Friedländer, Kolliker, Bischoff, His, Krause, Hening, Winckel and others in this study of the young ovum, say a potent factor in the malposition of the placenta is an unhealthy discharge which prevents the vitalized ovum from taking lodgment in the superior zone; or, that adhesion between the decidua vera and reflexa would be prevented and the ovum be carried to the inferior zone and there the decidua serotina be formed. Yet Hart is of opinion there is primary implantation low down in the uterus because the ovum can graft only on a surface denuded of epithelium by menstruation, that the ovum grafts only with connective tissue.

However, I do not think this the occasion to follow in detail the ovum in its journey from the graafian follicle through the fallopian tube, or describe the changes which take place preparatory to meeting the vitalizing germ, or when the vitalized ovum begins segmentation, why or how the uterine mucosa is prepared to receive the ovum, or how the membranes now called the decidua begin to grow around and over it to form the decidua reflexa and the spot on the vera where this takes place becomes the decidua serotina and this the site of the placenta. But assuming these processes do take place in some way, and the placenta is the union of the fetal chorion with some spot on the vera, I shall leave this to be elucidated by a special hystogenist and proceed to the study of the placenta wherever located.

The placenta has been classified according to its position in the uterus.

The normal placenta site is a little to one side at the fundus.

Placenta centralis fundus can scarcely be called abnormal and has no special significance except inversion is more apt to occur in this variety.

It is known as partial when in the inferior zone the edge reaches to or partially covers the internal os, lateral when situated just low enough to be in that part of the uterus most liable to expansion but does not cover any part of the os.

Marginal is a lateral with a portion of its margin extending into or through the internal os.

There is another variety situated as the partial but has around the margin isolated or groups of cotyledons. When several of these cotyledonous tufts are so situated as to spread over or reach across the os, being always connected with the main body of the placenta by little else than blood-vessels, is easily torn asunder by dilatation of the os. This variety is called succenturia because, I suppose, it means accessory to or having an annex.

Placenta previa centralis or complete placenta previa is so situated in the lower segment of the uterus as to be central over and completely covering the os.

Each of these varieties of placenta previa as gestation advances is liable by irritation to excite muscular contraction sufficient to lacerate or detach a portion of the placental margin.

This classification, not always without variation, is of but little clinical importance except to aid in the study of complications arising from malposition of the placenta.

When called to a case in which uterine hemorrhage exists at any time from the second month to the last trimester in gestation, especially if there are gushes of blood without pain and no history of traumatism we may suspect placenta previa.

In seeking for a cause of the hemorrhage we find a patulous dilatable os, the cervix larger than in the normal or fundal implantation, a ready coagulation of the blood, and if in the second or third trimester there is pulsation in the cervix we may pretty safely conclude we have a placenta previa to deal with.

Many authors think placenta previa exists much oftener than is recognized because abortions and miscarriages occur in from 40 per cent. to 60 per cent. of such pregnancies.

Müller thinks an adherent placenta may be expected in more than one-third of the cases of placenta previa. Also, that there is a tendency to inertia and consequent post-partum hemorrhage, which accords with my experience. Subinvolution is more apt to occur if in the latter part of term.

If the diagnosis is clear, and is believed to be a case of complete marginal or a succenturiate, and the hemorrhage profuse, the treatment is to terminate gestation as soon as possible.

I would here like to call your attention to an article in the *American Journal of Obstetrics*, December, 1884, in which I think will be found a most valuable contribution on the treatment of placenta previa. The author (Lomer, of Berlin) especially recommends the Braxton-Hicks bimanual version, dilatation of the os, rupture of the membranes and delivery.

It has been my practice when hemorrhage was not very profuse and before the seventh month, and, where incessant vigilance can be relied on, to not interfere until viability is quite certain or urgent causes demand immediate interference. Yet, I am aware at or after the seventh month there is danger of fatal hemorrhage before assistance can be had. (See *American Gyneca'l and Obstet'l Jour.*, February, 1900.)

In cases in which the diagnosis of placenta previa is clear, and I am compelled to interfere, I always introduce a tampon unless by reason of dangerous hemorrhage I am compelled to forcibly dilate and deliver at once. When the tampon is placed it should remain 10 to 24 hours, or until labor pain is very pronounced. On removing the tampon, the hands of the operator being clean, he should continue the dilatation, first with one finger, then two, three, or as much of the hand as is necessary to sufficiently dilate to allow the head of the fetus to pass without difficulty. Then search for the placenta, which is usually found on the left side. If partial or lateral, avoid further laceration or detachment if possible on account of increasing the hemorrhage which is profuse at this stage of the operation; but if central push the fingers through the mass, rupture the membrane, seize a leg whereby we can make traction enough to crowd the body against the frightfully bleeding mass and thus practically control the hemorrhage, when we can proceed more leisurely.

Of the five well defined cases of partial placenta previa, among others not so well demonstrated, in my practice, the first occurred in a primipara aged about 26 years, and in the sixth month of gestation, at which time there was profuse hemorrhage. I then did not know the cause of the bleeding, for this occurred in 1867. But I enjoined absolute rest in the recumbent position, thinking the cause traumatic. I heard nothing more of the case until term, when hemorrhage recurred, and at the same time active labor set in and the patient was delivered, unaided, of a healthy male child. The case proved to be a lateral placenta previa, left side, with strong adhesions. The mother, child and doctor did well in their first experience. The other partial placenta previa cases which have fallen under my observation all had funis presentations, a great deal of hemorrhage, and still-born children. Mothers recovered. Since writing the above I was called to a case of threatened abortion with frightful hemorrhage. The tampon was resorted to and ten hours later on removing tampon found the os dilated enough to introduce the finger and dilate sufficiently to reach and remove a mass which proved to be a fetus in the sack, and the placenta still attached. It was evidently marginal. Patient was much exhausted by reason of much hemorrhage, soon rallied, and made a good recovery.

September 24, 1885, I was called to Mrs. M——, age 24 years, primipara at or near full term of gestation, and found her bleeding profusely between pains, which occurred ten to fifteen minutes apart. I learned that about the fourth and fifth month of gestation she had slight hemorrhages which were considered menstrual, and but little was thought of it. Four days before my visit to patient she had several sudden gushes of hemorrhage with no pain. Suspecting something wrong, I requested an immediate examination, which revealed the os dilated about 1½ inches. There could easily be felt a boggy mass which had a placental feel, and as I could not pass my finger around it or beyond it, concluded it was a placenta previa centralis. This being my first case, I did not like to make forcible delivery without counsel, and Dr. H. G. Landis was called and readily confirmed my diagnosis, and we at once proceeded, under anesthetics, to deliver. Dr. Landis dilated enough to push his hand through the frightfully bleeding mass, ruptured the membranes, when a strong contraction forced the head into the superior straight, the funis presenting also. I quickly applied forceps, and with slight traction had the awfully frightful hemorrhage under control, with normal pains and a little manipulation delivery of a well-formed still-born female child was completed. The placenta preceded expulsion of the head of the child. The uterus kindly contracted and there was no inertia or subinvolution so common in these cases. Recovery good.

Case 2.—February 22, 1896. 1 A. M. I was called 1½ miles west of city and found Mrs. S.—— in labor, or had been. She was very pale, weak, and complaining of feeling "so queer," and pleading for help. A hasty examination showed the bed literally saturated and a pool of blood on the floor. A digital examination revealed similar conditions found in case 1, only there was not that profuse hemorrhage because she was exsanguine. I hastily explained to the patient's husband and attendants why I should deliver at once or the patient would soon die. I was surprised when all but the suffering woman objected to manual interference, saying she had five children and had bled this way in each confinement; that the doctor in her previous confinements gave ergot and she came out all right. After wasting fifteen minutes' precious time, and threatening to leave, the husband proposed counsel. When I showed him she was pulseless and blind from loss of blood, and in feeble voice pleading for help, the husband consented that I should do what I could for her. I at once prepared the forceps, and proceeded to dilate, which was easily accomplished, ruptured the amniotic sack, intending to bring down a leg, when the head descended as in case No. 1. I quickly applied the forceps, the head being in O. L. A. or O. D. P. I did not stop to investigate, but soon delivered the dying woman of a still-born male child; the placenta preceding as in the first case.

All the restoratives at hand were resorted to, viz.: heat, external and internal, also hypodermic stimulants which had no appreciable effect, and patient died about forty-five minutes after my arrival at her bedside.

This records the saddest case in my obstetrical experience, and reminds me I did not have instruments for transfusion in my armamentarium. This sad case indelibly impressed this thought, that when called to a case of complete placenta previa at or near complete gestation, it demanded good judgment, keen discernment and prompt, decisive action; for we know we must pass through a Gettysburg to reach an Appomattox.

Case 3.—March 5, 1899, I was called to Mrs. G.——, age 32 years, 3d paræ, and living on Charles street, this city. On inquiry learned she was about five months pregnant, and had frequent hemorrhages during the past six weeks. She was pale, weak, and not able to leave her bed. Examination revealed a large slightly pulsating cervix. External os dilated about an inch. At internal os was felt a boggy mass which was recognized as placenta. Hemorrhage was so profuse at this time I was obliged to postpone further examination and resort to the tampon. The nature of her trouble was explained, and she was told nothing but delivery would stop the hemorrhage. I was then informed that Dr. W. U. Cole, of this city, had conducted her through a similar experience about three years before. At 3.30 P. M. I returned with Dr. J. F. Jones who gave the anesthetic, when I dilated sufficiently to know I had a case of complete placenta previa to deal with. I then pushed the dilatation as rapidly as possible until I could pass four fingers through the bleeding mass, rupture the membrane and seize a foot, drag down with sufficient force to stop the awful hemorrhage. The process of delivery was then more deliberate and accomplished without difficulty. The fragments of the placenta were then clawed off, the cavity of uterus cleansed with 1-1,000 bichloride sol. Patient was then made comfortable in bed, allowed to recover from the anesthetic, and in due time made a good recovery.

REPORT OF A CASE OF GANGRENE OF THE TONSIL.

By ALEXANDER C. HOWE, M.D., of Brooklyn, N. Y.,
Assistant Surgeon, Throat Department of Manhattan Eye and Ear Hospital; Surgeon, Throat Department, Williamsburgh Hospital.

I was requested by another physician to call on a patient suffering from a severe sore throat. He had attended him for a week with positively no improvement, and was very anxious regarding his condition. I found the patient, a young man of 26 years, bolstered up in a half-sitting position. He had the peculiar pallor and partial stupor or lethargy of considerable toxemia. The stench in the room was simply fearful, and at once suggested some necrotic process. A vessel at his side contained a dark brownish semi-solid material that he had expectorated. Both lips were excoriated and swollen. In fact, the whole of the lower part of the face and submaxillary region, especially the left side, was swollen. Fetid dark brownish mucus was constantly oozing from his open mouth. Respiration was entirely oral. Every few minutes a painful effort to expectorate was made. Deglutition was almost impossible because of the great pain.

The history given was that the throat had begun to get sore a week before. Chill, fever and myalgia were severe at the onset. For the first few days the symptoms were similar to an unusually severe case of peritonsillar abscess. The usual local and internal treatment for such a condition had been given except that no incision had been made. Both the pain and swelling in the region of the left tonsil had increased, and the day before I called he had begun to expectorate a brownish, foul-smelling discharge. He was rapidly becoming emaciated and prostrated, and was bathed almost constantly in a profuse perspiration. Almost from the first it had been impossible for him to sleep except sitting up, and then only for a few moments at a time. Temperature was 104.4° and pulse from 110 to 120.

On looking in his mouth I found his gums, the inner surface of the labia and the under surface of his tongue greatly swollen and covered with deep excoriations or ulcers. Both tonsillar regions were swollen and of a deep red or purplish color, indicating considerable stasis. On the left side was a large tumor that involved the entire tonsillar region extending beyond the median line nearly to the opposite tonsil and well up into the nasopharynx. On the anterior surface of this tumor was a circular necrosed spot about half an inch in diameter of the peculiar greenish color of gangrenous tissue, and in its center was a perforation through which came a dark brownish grumous discharge. This evidently was the source of the brownish material he was expectorating. On the inner surface of the mass was a similar spot also perforated, and exuding a similar material. An incision was made connecting the two gangrenous portions. No pus flowed, but a dry, stringy or fibrous gangrenous mass presented itself at once, indicating that the whole interior of the mass was necrosed. With the forceps a rounded mass about the size of an ordinary hickory nut was removed without effort, much as a nut could be picked from its shuck or shell. The odor was foul beyond description. The mass, which was the entire necrosed tonsil, was black and firm and could be sliced much as putty or moulding clay can. It had every appearance of having rapidly undergone a dry gangrenous process. The removal of the tonsil exposed a large cavity lined with a half an inch or more of greenish black, necrosed tissue. There was very little evidence of disintegration or breaking down, but it was in a dry, stringy or fibrous condition. H_2O_2, 25%, was applied thoroughly to the entire cavity without causing pain, and an alkaline cleansing wash was given, with supporting treatment.

The following day it was evident that the gangrenous process was still active, as it had extended further anteriorly and the excavation was somewhat deeper. As much of the necrosed tissue as possible was cut away and H_2O_2, 25%, again applied. The same treatment was again given in the afternoon. The following morning the necrotic process was still actively progressing and the cavity had deepened to about an inch and a half, and seemed to include some of the larger blood-vessels. Considerable necrotic tissue was again cut away and pure nitric acid applied. That also caused no pain, but seemed to dry and whiten the dead tissue. The case was now desperate. Severe hemorrhage was possible at any moment with the patient on the verge of collapse and in a pitiful condition.

Fortunately the nitric acid seemed to stop further gangrenous process. The next day indications appeared of an attempt to slough off the necrosed tissue, the temperature began to drop, and there was less exquisite pain on deglutition. After removal of the necrosed tonsil there had been but little pain in that region except on motion of the parts. The ulcers on the lips and tongue showed no tendency to heal so long as the sloughing off of the dead tissue continued.

Nitric acid, H_2O_2, and the cutting away of as much necrosed tissue as possible was continued until the tonsilar region was entirely free from dead tissue. Healthy granulations soon appeared and the cavity rapidly filled. The healing of the labial and lingual ulcers was slow and tedious. The patient rapidly recovered and in about three weeks after I first saw him was about and out. After healing, the soft palate was drawn considerably to the left side and backwards, but in no way interfered with deglutition or phonation.

The patient, before this attack, had been apparently a well, strong fellow, except for a certain amount of pallor, that was accounted for by his habits. He was athletic in build and tastes, weighing about 170 pounds, and standing about 5 feet 11 inches. His weight during his illness had fallen considerably below 130 pounds. He did not use alcohol in any form and was a moderate smoker, but had practised excessive venery and had deprived himself of a great amount of sleep. He gave no history of venereal disease other than occasional attacks of gonorrhea. He was perfectly frank in his statements, and I had no reason to doubt his word.

His subsequent history was as peculiar as the attack just described. About three months after this illness, while doing camp duty in the militia, he contracted a severe cold, which manifested itself chiefly as a rhinitis. Severe epistaxis followed, which was only stopped by intranasal packing. Free hemorrhage returned at every attempt to remove the packing, and in this condition he was brought home. There he was attended by his family physician, who was unable to control the hemorrhage, except by continuing the nasal plug. Hemorrhage resulted from every removal of the packing, and it was replaced. In a few days a foul-smelling discharge began from his nares, similar in odor to that noticed during his previous illness. Multiple abscesses and superficial capillary hemorrhage appeared, and he died from a general septico-pyemic condition. The history of this last illness I secured from the attending physician.

There is apparently but one deduction to draw from this history. There was an inherent lack of tissue vitality, which was exaggerated by his excesses and bad hygiene, so that in the usual inflammation of a peritonsillar abscess the nutrition of the involved tissue was reduced to such an extent that the tissues rapidly necrosed without any severe infection, and so rapidly that a large amount of tissue was dead before disintegration could take place to any extent. In his last illness necrosis probably followed an acute rhinitis, aggravated by a diminished nutrition, due to the pressure of the packing placed in the nasal cavity to stop the hemorrhage. I have since treated several immediate members of the family and have found no unusual vitiated constitutional conditions.—*Phila. Med. Jour.*

A BRIEF INQUIRY INTO THE ETIOLOGY AND TREATMENT OF HAY FEVER.

By EDWIN HANK, M.D., Tanners Creek, Va.

Many theories have been advanced of late years as to the cause of hay fever, and fully as many suggestions offered as to the best mode of treatment, from all which we may infer that the disease is still somewhat of a riddle to the profession. An eminent philosopher once said, that of two or more opposing doctrines there is always a grain of truth hidden in each. So with our present subject we may assume that the whole truth is not to be found in any single theory, but rather in the combination of many.

There are those, for instance, who pin their faith on the popular anatomical theory; *i. e.*, that there exists an undue prominence of the inferior turbinated bones, accompanied by an hypertrophy of the immediately overlying soft parts. Others affirm that, in many cases, the nostrils are obstructed by deflection of the septum. There are many, too, who support the nervous theory; *i. e.*, that the local manifestations are principally due to vasomotor reflexes, producing arterial tension and resultant obstruction to the capillary circulation. Others are of the opinion that there exists a personal idiosyncrasy, or predisposition to become influenced by an external causative agency; but without some further explanation this would seem to be simply a convenient expression to cloak ignorance. In conclusion, it may be said, that all recognize some external irritant as an immediate factor in the case; *e. g.*, pollen of plants, strong odors and vapors, etc. The periodicity, so remarkable in this disease, is accounted for on the ground that the "external irritant" only appears at certain seasons of the year. There are, of course, exceptions, as in instances where the victim has been exposed to inhalations from certain drugs.

In the summing up of and sifting out the truth from these various theories, it will be seen that three etiologic factors stand out most prominent, which are best expressed in the following hypothesis, formulated by Sajous: 1. An external irritant. 2. A "*predisposition*" to become influenced by this irritant. 3. A vulnerable or sensitive area through which the irritant may exert its influence. All authorities are substantially agreed on the existence of the first of these factors, and it may be passed over here without further comment. The causative connection between the second and third, however, is not yet so well established, and it is on this subject that we beg to offer a few suggestions. In regard to the "sensitive area," we have no doubt that in a few isolated cases the trouble is due to abnormally prominent turbinated bones, but in the vast majority of instances we believe that it is simply one of the many local manifestations of the mysterious "predisposition" itself. If this view be correct, an investigation into the nature of this predisposition will be of no little assistance in determining the etiology and treatment of hay fever.

The opinion is now fast gaining credence among specialists on diseases of the skin, eye, nose and throat, respectively, that many disorders of the tegumentary system which have hitherto been classed as specific diseases are in reality but symptomatic of the general dyscrasia known as uricacidæmia. Uratic and calcareous deposits are found in the skin and mucous membranes of these patients as in the joints and muscles of the gouty and rheumatic, and as the joints and muscles of the latter become congested and swollen through the presence of this irritant foreign body so do the skin and mucosæ of the victims of herpes, psoriasis, urticaria, tonsillitis, pharyngitis, conjunctivitis, etc. (all of which are now recognized as symptomatic of the uric acid diathesis) and, sometimes, even astigmatism—the nutrition of the corneal muscles having finally become interfered with owing to the deposits already mentioned. The nasal, pharyngeal and bronchial mucous membranes, as well as the skin and conjunctivæ of uric acid victims, are extremely sensitive to both internal and external influences, becoming inflamed and swollen on the slightest pretext or most fugitive impression.

This latter fact is no doubt largely due to arterial tension, and partly to the unnatural efforts of skin and mucosæ to perform the excretory function of kidneys, liver and bowels, which are habitually inactive in all lithæmic patients. A sudden chill, too, which checks the acid excretion from the skin, rendering the blood less alkaline and causing the deposition from the circulation of the uric acid salts, will not only bring on an attack of rheumatism and gout, but also of tonsillitis or bronchitis, or even of the simple coryza. In these patients—owing to the arterial tension—there is almost always turgescence of the erectile tissue of the mucous membranes, causing catarrh, especially of nose and throat, where exposed to constant currents of air and other atmospheric influences. It is not surprising, therefore, why in patients thus predisposed there should exist the "sensitive area," subject to "external irritants" which result in hay fever, nor why conjunctivitis and bronchitis should so frequently complicate this troublesome malady. It is not contended here that all uric acid subjects are necessarily victims of hay fever, nor that all hay fever subjects are necessarily victims of the uric acid diathesis, but we do believe that the "sensitive area" exists in many persons of this "predisposition" and that the majority of hay fever patients are thus predisposed.

It will readily be seen, that in considering the treatment of these cases there are two causative factors to be removed—either the "external irritant" or the "predisposition." To those who can afford to visit the mountains in the fall the cure is simple, for if they cannot remove the irritant they can remove themselves. But for those unfortunates who are obliged to remain at home there is only one alternative—to remove the predisposition. Aside from directions given as to the diet, largely interdicting nitrogenous food stuffs, it should be the duty of the attending physician to stimulate the action of his patient's kidneys, liver and bowels, and thus give exit through the proper channels toxins which the skin and mucosæ have been attempting to remove. Among many other cases similarly tested, the following one is cited here to illustrate the fact, not only that the uric acid diathesis may be a common predisposing cause of hay fever, but that timely prophylactic treatment with appropriate antiuric acid remedies may effectually prevent an attack.

Mr. F——, æt. 52, a prominent trucker of Norfolk County, has been a sufferer from the effects of hay fever every fall for the last twelve years, each attack beginning about the first of August and lasting until frost. Various methods of treatment had been tried in this case, without benefit, until finally I determined to give the antiuric acid treatment a trial, being led to this decision from the unmistakable evidences of urid acid deposits in the patient's urine. Other symptoms of the diathesis were also prominent. The skin was dry and yellow, the conjunctiva injected, and patches of congestion found in the pharynx indicating the "rheumatic sore throat." The patient's general health was not seriously affected, but it was evident that uric acid salts were being gradually deposited in the follicles of skin and mucosæ, the latter, lining the nasal passages, being almost constantly swollen and emitting a sticky mucus.

Treatment was begun about a month before the anticipated attack. I directed that one teaspoonful of thialion be taken in a teacup of warm water about one hour before each meal for three days, after which the number of doses was reduced to one each day taken before breakfast. I also eliminated from his diet, as far as possible, all albuminous principles. No signs of trouble appeared until the latter part of August, when, owing to exposure to cold and wet, the patient began to evince signs of his dread malady, and suffered mentally in consequence. I increased the number of doses given to three times a day for two days, and then fell back to one dose per day—but increasing the size to one and a half teaspoonfuls. The result was most satisfactory. Within a few hours all symptoms of the attack had subsided, and the case progressed without further trouble. A somewhat peculiar fact to be mentioned in this case is, that notwithstanding his rigid diet, the patient steadily increased in weight.

SPONTANEOUS DISCHARGE OF CEREBRO-SPINAL FLUID FROM THE NOSE.*

By W. FREUDENTHAL, M.D.

The disease I am about to describe in a very instructive case is so rare that in this country there has been only one similar, published by Scheppegrell, of New Orleans.† Although Scheppegrell does not mention anything about the presence in the fluid of a substance responding to the tests for sugar, all the other symptoms are so marked that there can be no doubt about the origin of the fluid. One or two other cases reported by American authors as nasal hydrorrhœa may belong to this category also, but this is not beyond doubt. There is one thing I would emphasize right now—viz., that the disease under question has nothing whatever to do with hydrorrhœa nasalis, and surely not with hay fever, as has been suggested by one author. These last two are nervous affections, while the other is a transudation from the cranial cavity. Th. Leber was one of the first to describe such a case,‡ in a girl fifteen years and six months of age, who had hydrocephalus from birth. For six months vision had failed and dizziness set in. Several times a week she had severe headaches; three months later a typical epileptic fit; then continuous dripping from left nostril. There was found post-neuritic atrophy in both discs and a marked hydrocephalus.

Of late a case of nasal hydrorrhœa has been published by Urbano Melzi, of Milan.§ The writer himself remarks: "The absence of reducing substances, the scarcity of proteid substances, the slight turbidity, as well as some clinical considerations, speak against the character of the normal cerebro-spinal liquid. On the other hand, the absence of mucin, the absence of morphological elements, the great percentage of inorganic substances represented, especially by the chlorides, are not characters corresponding to those of the liquid of nasal hydrorrhœa." Therefore, we must consider the case doubtful, too.

O. Körner, of Rostock, published a case‖ of a woman thirty-seven years of age. For eight years dizziness on walking. For four months discharge from left nostril. Optic atrophy on both sides, etc.

The most important and exhaustive publication on this topic is that by St. Clair Thomson, of London.¶ His case was that of a woman of twenty-five. The fluid ran for over three years, day and night, from the left side. The sense of smell was unaffected. She used from five to six handkerchiefs a day, and these, on being dried, were found to be quite pliable, and not stiff, as they would have been in cases of mere increase of mucous secretion. There were four intermissions in the flow, one of these lasting for sixteen days, two lasting twenty-eight days, and the other for two months. At these times there were headaches, chiefly over the left eye and the top and back of the head, and they were of a most severe character. At other times the patient remained in perfect health; "indeed, as regards attacks of headache to which she had been subject, she is even better than before this flow commenced."

---

*Read before the Medical Society of the State of New York at its ninety-fourth annual meeting, held at Albany, January 30, 31, and Februrary 1, 1900.

†Case of Recurrent Headache, Each Attack Being Relieved by the Discharge Through Right Nostril of a Fluid from Cranial Cavity. *Journal of the American Medical Association*, February 26, 1898, vol. xxx, p. 480.

‡Ein Fall von Hydrocephalus mit neuritischer Sehnervenatrophie und continuirlichem Abträufeln wässeriger Flüssigkeit aus der Nase. Grafe's *Archiv f. Ophthalmol.*, 1883, Band xxix, p. 273.

§*Journal of Laryngology, Rhinology, and Otology*, December, 1899.

‖Abfluss von Liquor cerebrospinalis durch die Nase und Opticusatrophie, etc. *Zeitschr. f. Ohrenh.*, Band xxxiii, 1898.

¶"The Cerebro-spinal Fluid; its Spontaneous Escape from the Nose," London, 1899.

For further details I would refer you to the very interesting and instructive book by St. Clair Thomson.

In order to understand the case on which I base my paper, I beg your permission to quote another which shows some similarity. In February, 1899, a woman consulted me on account of a very peculiar discharge from the nose. The history, in short, is as follows:

Mrs. H. S. is twenty-nine years of age. When a child she was always weak and anæmic; had measles, scarlet fever, etc. At the age of eighteen she married. She has had no children, no abortions, and no signs of any specific infection. She has always been nervous, but more so since her marriage, which has led her to consult many physicians. She has also been treated for some stomach trouble. For the last five years she has to sneeze a good deal every morning, and immediately after her nose commences to run. It drips for several hours, mostly from eight to ten o'clock in the morning. Occasionally it runs like a stream. On examination nothing abnormal was revealed in the nose, or in any other part of the body. The patient herself seemed to take the affection in a rather light manner. She brought me four ounces of a fluid discharged the same morning from the nose. It was a watery seromucous discharge, which presented under the microscope masses of flat epithelial cells. Its reaction was slightly alkaline, its specific gravity 1.015, and it showed slight turbidity with a certain amount of floccules in it. There was also mucin present. In short, this was a case of true nasal hydrorrhœa, which was purely of nervous origin. The neurotic element in this case seems to be the same underlying factor as in the discharge of another disease, which we know under the name of gastrosuccorrhœa chronica. In fact, I believe her stomach trouble was nothing else but this gastrosuccorrhœa. After the demonstration of this case before a medical society, a colleague sent me another case with the same diagnosis: hydrorrhœa nasalis. We soon found out, however, that it was not the hydrorrhœa nasalis; but as it offers a great many interesting points I shall have to give you all the details of the case:

Author's Case.—Mrs. C. B. is fifty years of age. In October, 1898, she had "very high fever, and it left her with a sort of bronchial cough." Since that time her nose has been steadily dripping. It began that winter and has continued ever since. Just a year before the dripping began she commenced to complain of pain in the forehead above the bridge of the nose. She had this night and day, and thought she was going out of her mind. She said: "If I do anything I am not responsible for it." As her daughter describes it, "She was out of her thoughts." She could not move a chair, could not get from one side of her bed to the other, had no ambition, and did not care about anything. This continued for nine weeks. At that time Dr. E. C. Spitzka was called in consultation, and is said to have made a very unfavorable prognosis, especially regarding her sufferings, which it was expected would materially increase from day to day. However, ice applications were made every night until warmer weather set in. Dr. K., her house physician, ordered a greenish salve (mercury) to be rubbed in, which made her better. She would not have it continued because she "felt so unclean when she had it on." When the dripping commenced her senses, as, for example, hearing, became perceptibly better. (She lost her sense of smell when the dripping began.) All summer she felt about the same, the nose dripping very profusely until December 8, 1899, when she had a "fearful" cough and fever. After the fever subsided the dripping grew less, and at the same time the "senses became more dull again" (her hearing and her whole mental tone). She lost her ambition to work around, and she again complained of a dull pain in her forehead. Her sleep was the most painful thing to watch. She "talks all the time, jumps, and gives nervous twitches and screams." Her condition at this time, however, was not nearly as bad as in 1897. The dripping soon returned and with this all the other symptoms disappeared. She is even now sometimes languid and without ambition, but generally she is extraordinarily active.

Mrs. B. came to me first on June 10, 1899, and her main complaint was the constant dripping of her nose. She used more than twenty handkerchiefs a day, and was greatly annoyed by the constant discharge. The discharge was of a most peculiar character and entirely different from any I had ever seen before. There was a constant dripping of a watery fluid from the nose day and night. This increased when she inclined her head forward. When she lay on her side it ran sometimes "as if it had been turned on," and it did not make any difference on which side she lay. The same was the case when she lay on her stomach. When she awoke in the morning she generally found the pillows saturated with moisture. Only when she lay on her back did it cease to drip and she felt easier; but she had to cough then, due to the discharge running down her throat. She told me she had seen Dr. Herman Knapp, of this city, who had made the diagnosis of neuritis optica. He had also removed a polypus from the left nostril. But the removal of this polypus occurred long after the discharge from the nose had commenced. Upon the advice of some colleague she had had to take quinine, sixty grains a day for four weeks, and in consequence of this she thinks she lost her hearing. I could confirm all she said about the dripping, and when I examined her by Killian's method I could easily see, while she was standing with her head bent slightly forward, the discharge collecting between the middle turbinated and the sæptum, and thence running down to the vestibulum. When she sat down again and inclined her head only a little backward, I could see a drop forming at the uvula, and gradually falling down to the lower parts. On retronasal inspection I could not see the fluid further upward. There was nothing abnormal in the left nostril, and there were no excoriations around the vestibule or on the upper lip, but the whole nostril was apparently saturated with moisture. On the other hand, the right nostril was remarkably dry, and sometimes I even found scabs in it. At the end of September, 1899, a polypus had formed again in the left nostril and was removed easily. On December 18th I saw her in bed while she was getting over an attack like those described above. There had been an intermission in the escape of the fluid followed immediately by symptoms of brain pressure. On that day it had commenced to flow again, and she at once began to feel easier. Still, I could notice that the woman, who is generally very talkative, was noticeably dull, very slow in her movements, and seemed not to care about anything. She complained about a "bronchitis" which disturbed her very much, but I could find no evidence of it. The cough, which was quite severe, was simply brought on by the fluid falling down on the epiglottis or some other part of the larynx.

Within a short time the patient was up again, and she is now feeling just as well as before, the fluid dripping the same as ever, too. Once in a while she "gets the blues," but, as a rule, she is inclined to joking and is remarkably talkative. Her sense of smell is lost, and in consequence of an otitis media catarrhalis chronica her hearing is very much affected.

The question now arises, What pathological condition is at the bottom of this malady? In answer to this, I would repeat that we have here a case of permanent spontaneous discharge of a watery fluid through the nose for more than two years. Before the flow commenced very grave brain symptoms were present, which disappeared as soon as the escape of fluid began. Twice an intermission of the flow occurred, and each time it was accompanied by symptoms of brain pressure, which left the patient again when the flow made its appearance. There must consequently be something that presses on the brain, and we have all reasons to believe that it is a tumor. Now, when intracranial pressure commenced to increase the symptoms were very grave, and there is no doubt that these would have been more pronounced and made themselves felt in a most disastrous manner, as in other cases of tumor of the brain, if Nature had not come to the rescue and opened a hole for the escape of the cerebro-spinal fluid. Thus the intracranial pressure was diminished, and the patient was not only relieved, but her life saved as well.

Regarding the seat of the supposed tumor, I am inclined to believe that it is situated on the hypophysis cerebri (chiasma nervorum opticorum). The fact that there exists an optic neuritis speaks for this location, as does also a case published by Gutsche.*

Now, if we accept the fact that there is a tumor in the brain, it must naturally follow that the discharge is nothing but cerebro-spinal fluid. In parenthesis I wish to remark here that the amount of fluid in the cerebrum is supposed to be about two cubic centimetres, while there is

---

Zur Pathogenese der Hypophysistumoren und über den nasalen Abfluss sowie das Verhalten des Liquor cerebro-spinalis bei einer Struma pituitaria. Dissertation. Erlangen, 1894.

more in the spinal canal. Under pathological conditions this fluid is formed rapidly, similar to effusions in the pleura and peritoneal cavities, and it then acquires the character of an ordinary serous exudation. More of this later on. But there are more proofs in favor of our belief that this discharge is nothing but cerebro-spinal fluid. As an important factor in this respect I consider the *constancy* of the flow—*i. e.*, day and night. In all cases of nasal hydrorrhœa which I could find in the literature, including my own, the flow stopped at night, while in all undoubted cases of cerebro-spinal discharge—which, by the way, are but few—the flow was permanent. This seems to be a very important point in the diagnosis of these two affections.

Finally comes the chemical analysis. While we must acknowledge the fact that we have no thorough distinction as yet between cerebro-spinal fluid and hydrorrhœa nasalis, still we know enough to say in some cases, "This is positively cerebro-spinal fluid, *and this is not.*" *Of the greatest importance* is the presence here of a *reducing substance*, and I am glad the chemical analysis confirmed our diagnosis by discovering the presence of 0.05 per cent. sugar. (The blood contains 0.2 per cent. sugar, and the lymph, according to Levene, from 0.07 to 0.3). Von Jacksch believes that the presence of sugar and the absence of proteids is proof enough that the fluid is of cerebro-spinal origin. In its first part this assertion is correct, while the second part is not quite so. The cerebro-spinal fluid *does* contain proteids, and, according to Hoppe-Seyler, the amount of proteids runs up to over 1 per cent. In our case, too, albumin was found.

Regarding the presence of phosphorus, we ought to expect, as Dr. Levene believed, an increase of it, but the chemical analysis gave a different result. Dr. P. A. Levene, of the Pathological Institute of the State of New York, of this city, was kind enough to undertake this laborious analysis. The fluid sent to the doctor measured about a hundred and twenty cubic centimetres, and was collected at intervals during twenty-four hours. It was a watery fluid without any sediment. The reaction was alkaline. Specific gravity, $1.007\frac{2}{10}$; total solids, 1.3 per cent.; mineral salts, 0.39 per cent.; mucin absent.

"I am very sorry," Dr. Levene continues, "the phosphorus estimation turned out rather a disappointment. There were not more than traces present in the one hundred and twenty cubic centimetres of liquid which I received last.

"Thus I can add to the last report the following. Thirty-five cubic centimetres of the liquid treated with five hundred cubic centimetres of alcohol and allowed to stand for some time, a slight precipitate consisting of proteid appeared. The filtrate evaporated to dryness, the residue dissolved in water and again treated with alcohol. The alcoholic extract again evaporated, the residue dissolved in fifty cubic centimetres of water and titrated with Pary's solution. The reducing substance calculated as glucose was equal to 0.05 per cent. The quantity of glucose in blood and lymph equaled 0.2 per cent.

"*Phosphorus Estimation.*—One hundred and twenty cubic centimetres of the liquid evaporated to dryness, ignited, the residue dissolved in water on the addition of some nitric acid. The solution, treated with a solution of ammonium molybdate, the precipitate redissolved in ammonia water, and the solution treated with magnesium mixture and allowed to stand twenty-four hours. Only a very slight precipitate appeared, not sufficient for weighing."

Although the phosphorus estimation did not come up to our expectation, still hardly anything is known about that chemical in connection with our question. But the principal facts—viz., the absence of mucin and, above all, the presence of a reducing substance—will alone suffice to confirm beyond doubt that the fluid is of cerebro-spinal origin.

Dr. William M. Leszynsky, who had seen the patient while the dripping was going on, kindly furnished me the following report on her nervous condition:

"New York, January 18, 1900.

"Dear Dr. Freudenthal: I herewith forward report of the result of my examination of your patient who has a continuous flow of cerebro-spinal fluid from the nose:

"Pulse, 72, regular, and without increase in tension. Heart and lungs show no indication of disease. Pupils equal, 3.5 millimetres. Reactions normal. There is slight rotary oscillation of the eyeballs in efforts at fixation upward, and upward and outward. No apparent muscular paresis. Vision: Right, $\frac{20}{30}$; left, $\frac{20}{100}$. Fields for form and color normal in both eyes. Ophthalmoscope reveals a receding neuro-retinitis in the left eye and a mild degree of papillitis in the right eye. Facial innervation normal. No sensory or motor disturbance of the fifth nerve. Movements of the tongue normal. Sense of taste defective in the anterior two-thirds of the tongue. On the right side she fails to detect the taste of 'sour,' 'salty,' or 'sweet,' while bitter is recognized. On the left side she can only recognize 'sweet' and 'bitter.' Taste is preserved on the posterior portion of the tongue. There is a complete loss of the sense of smell on both sides. There is also deafness affecting both ears, as a result of chronic otitis media. The thyroid gland is of normal size.

"Her memory and judgment are not affected. Her daughter states that the patient's memory is 'abnormally acute.'

"The urine contains neither albumin nor sugar. Systematic physical examination shows no further evidence of disease of the nervous system. Very truly yours, "William M. Leszynsky."

I have nothing to add to this report except to state that the doctor did not see the patient when the flow had stopped. He saw her while the discharge was going on and the patient felt at her best. This fact should not be overlooked.

If one asks us now for the route of the exit of the discharge from the cranial cavity we are not able to give positive facts. Of the few cases of this disease on record autopsies have been made in only a small percentage. In one case, according to St. Clair Thomson, the escape in life had taken place through a small hole in the dura mater, alongside the apophysis crista galli. Of the other instances, where death took place with cerebral symptoms, we have only the statement of the route in two cases; in two other cases, although gross lesions were found in the brain and membranes, no connection could be found with the nose, and in another case the result of the post-mortem examination was entirely negative. However this may be, we have to believe that the escape takes place through the cribriform plate of the ethmoid into the nose. Thomson advances the idea that there might exist a small congenital meningocele in the region of the cribriform plate of the ethmoid, which ruptures into the nose under some exceptional pressure. Of course, this is mere speculation that cannot be proved. I am at a loss to say why in some tumors of the brain the pressure is strong enough or certain parts of the cribriform plate are weak enough to allow the fluid to escape, and why this should not be the case in others. If we knew this, perhaps we could utilize it for therapeutic purposes.

The appearance of anosmia must be attributed most likely to increased intracranial pressure, a theory advanced some years ago by Quincke.

Thomson had named this whole affection connected with the discharge of cerebro-spinal fluid cerebro-spinal rhinorrhœa. I must say I am not in favor of the term rhinorrhœa, principally because it is not a rhinorrhœa, but—*sit venia verbo*—a craniorrhœa. The fluid comes from the cranium and not from the nose, although it has to pass through it. But if ever the word catarrh (from *κατά ῥέω* = to run down) was used properly, it would be in this rare affection. Perhaps cerebro-spinal catarrh would be the most proper name whereby to call it.

In several of these cases formation of polypi took place. Thus, in ours, polypi had twice to be removed, but without any relief to the patient. Their formation, as most writers believe, is due to the constant soaking of the mucous membranes.

It is peculiar to notice that in by far the majority of cases the left nostril was the one that discharged this fluid. Why this should be so is entirely incomprehensible.

Regarding the treatment of these cases we are absolutely helpless. Nor should we try to stop the flow. This is also the wish of my patient, who fully appreciates that the recurrence of her serious symptoms is due to the cessation of the flow. How long she will be able to stand this is more than we can answer.

SEA SICKNESS.

By J. B. BUSDRAGHI, M.D., of Madrid, Spain.
Of the Universities of Turin (Italy) and Madrid (Spain).

Sea sickness is a generic term applied to a pathologic state which ensues when a sea voyage is taken by some individuals. It is characterized by dizziness, vomiting, and general disorder of the organism. Many terrestrial animals, such as horses, oxen, elephants, monkeys, sheep, dogs, hogs, etc., also suffer from this disease on sea voyages. Many theories have been advanced in explanation of the disease. Dr. Graily Hewitt succeeded in producing symptoms of the disease by letting individuals swing before an oscillating looking-glass. He concluded, from this experiment, that the disease is due to a disorder of the visual apparatus. The truth of this theory, plausible though it may be, is shaken by the observation of clinicians that blind men suffer with the disease as well as those with normal vision, as do *voyageurs* while sleeping.

An individual starting upon a sea voyage, thinking of the probable dangers that threaten him, enters into a state of excitation and exhilaration, so different is the life which he is about to enter from the tranquil and placid existence which he has been leading before this voyage. This state of excitation does not even spare the tried seamen, who all are superstitious to a marked degree, as we may judge from the amulets, etc., which they wear preparatory to taking a sea voyage. Among the various forms of neurasthenia, there is one called agarophobia, in consequence of which individuals can walk along a street without any ill effects, but, strange to say, they are obliged to shun open squares. The effect produced upon the visual apparatus by the open sea, the excitement of the individual, and the solar reflex or brilliant light, etc., all combine to produce sea sickness. The sense of smell and also the sense of hearing is affected in sea sickness, as it is often noted that individuals suffering with sea sickness complain of the noise made by the engines and screws, and attribute to these noises their complaints. The sense of smell is sometimes a factor in the cause of this disease, and many persons cannot approach the kitchen because of the odors which emanate therefrom. Many cannot remain in the dining-room, and, in some cases, the odor of salt water causes dizziness and vomiting. The same thing may be said of the effects of heat and cold.

Another factor in the production of sea sickness is the disturbance in the natural equilibrium of the body. Thus alternate anemia and hyperemia of the brain is produced in individuals on board ship. This effect of disturbance of the equilibrium of the body is seen in the liver particularly, because it is a large viscus, and it is oscillated by the constant jerking of the ship. The stomach, particularly after a meal, the spleen, the bowels, the bladder, the diaphragm, the heart, etc., all are disturbed by the oscillation of the ship.

Another cause of sea sickness is to be found in the atmospheric conditions which even influence the temperament of people when on shore, making them nervous and excitable at times. The direction of the wind, the clouding of the sky, are all conditions that play a part in the production of this disease.

We must now say something about the treatment of this disease. Many have tried to solve this problem—*i. e.*, the finding of a sovereign remedy for this disease. Nearly all the remedies that are used in the treatment of this disease are purely given for empirical reasons, without any foundation for a scientifically indicated drug. Many efforts have been made to prevent the occurrence of this disease; for instance, the idea has been utilized of making the interior of the ship as much like the scenes on shore as possible, by painting the walls of the cabin to represent houses, by placing fountains in the center of the room, etc. Another innovation that has been introduced is to have music and dancing on board, so that an agreeable effect is produced upon the ear, etc. In order to take away the undulatory effects produced by the moving vessel, it has been proposed to build the ships of greater length. The royal apartments on the yacht of the Queen of England are suspended in three hundred concentric hoops, and the movement of the ship is thereby not noticed by the passengers. As for the use of drugs in this condition, we must treat the cases symptomatically. For those with torpid livers, and for those who are constipated, a purge is indicated. Give the bromides to the hysterical; tonics and iron to anemics and chlorotics; a careful diet to those with gastric disorders. A contrivance devised by the English physician Wollaston is useful on short trips—*i. e.*, an apparatus fitting around the abdomen, and in that way checking the swinging of the abdominal viscera. On long voyages, however, this device does no good, for the intestines accommodate themselves in their confined position, and become as much shaken up as if there were no abdominal supporter worn.—*Western Med. Journal.*

THE USE AND ABUSE OF THE VAGINAL DOUCHE.

By I. S. STONE, M.D., Washington, D. C.

Is the so universally adopted practice of using the vaginal syringe one without harm to the patient in all cases? We do not wish to limit the inquiry to what may be styled the use of the douche in health, or comparative health, but to include in this comment remarks upon its use in disease of the pelvic organs of women.

Since Emmet popularized and emphasized the practice, nearly all of us who treat the diseases of women rely upon the douche, with perhaps more confidence, in many cases, than results really warrant. Dr. Emmet taught us that the douche properly given is an agency whose importance cannot be overestimated, but he also clearly showed us how, as generally administered, its use is absolutely without beneficial results, and may in some instances result in positive harm.

From long observation the writer is convinced that as ordinarily given the vaginal douche is without good effect, save as a cleansing agency, and even this use may be not unattended with danger. If any one will take the trouble to read Dr. Emmet's precise directions to be followed in giving a douche, the writer would have but little to say in addition. But in most instances physicians fail to insist upon the proper administration of hot water in the treatment of the diseases of women. As a prerequisite the patient must have a large bed-pan, capable of holding several quarts of water, or, better still, one with an overflow tube, which will allow the water to flow for twenty to thirty minutes without disturbing the patient or necessitating a change of her position.

In giving a prolonged hot-water douche we should bear in mind that the vagina must be distended with the water at a temperature of not less than 120 degrees, Fahrenheit, which means about the same thing as applying a hot poultice to the upper part of the vagina, hoping to influence the organs just above or within the pelvis. We do not believe this practice is resorted to with the confidence it deserves, nor do we think physicians insist upon the proper use of hot water douches as often as might be beneficial to many who suffer pain and who have some minor form of infectious disease.

But it is not our intention to suggest the diseases which may be benefited by the various forms of douching now used by physicians. We wish to urge a specific and definite use of the douche rather than permit the random, or, perchance, misdirected use of what may do either good or harm. We believe many women resort to the vaginal wash with unnecessary frequency. The prescription of a douche for a leucorrhea is often made without definite object. It is a shotgun prescription, and is about as often useless as beneficial. Surely no uterine leucorrhea was ever cured by douching the vagina. One is well nigh tempted to say that a woman might almost indefinitely perpetuate a leucorrhea by daily, or thrice daily, vaginal injections. It is not only against the medicated douche that we contend, but also against the practice of daily douching a healthy or what should be made a healthy canal.

We have at last arrived at the time when powerful chemical antiseptics are not used by the best obstetricians in the healthy parturient canal, either before or after labor. Even in septic cases these douches are now much restricted. Hence we urge that, in cases where there is either a normal or nearly normal vaginal and cervix, this practice is useless, if not worse than useless.

On the plea of promoting cleanliness, we know that many women resort to the practice, and we are confident that very few cases are cured by this means. We should aim to cure the disease necessitating the douche, and let the patient look forward to the time when she must discontinue the practice of daily or more frequent washing out her vagina. We know that with many women the douche habit is strongly and perhaps permanently fixed, and we cannot expect a change until the profession indicates the possibility of harmful results from needless and persistent washing away of the natural and healthful mucus which should bathe every mucous membrane.

TO SUMMARIZE.

1. It is important to follow Emmet's directions if we are to secure benefit from use of hot vaginal douches.

2. Douches should be prescribed by the physician only, who should indicate how long a period of such treatment is required, and when it may be discontinued.

3. The necessity for sterilization of the syringe point should not be overlooked in any case, and it should be remembered that sterilization does not mean a short immersion of an instrument in an antiseptic solution, but resort should be had to boiling.

4. Vaginal washes may possibly relieve a vaginitis, but they never cure endometritis. Hence we need not have patients continue such treatment indefinitely to the exclusion of other appropriate measures.

1449 Rhode Island Avenue.

CONSECUTIVE EXAMINATION OF A CRUSHED LIMB.

Under favorable circumstances, in a considerable number of cases, but one examination is at all necessary; as when no extensive complications are present, when ample assistance, with instruments and dressings, adjustment, etc., are convenient, to commence and end one examination in the first instance. This is the ideal, and happily, in our time, is commonly practicable.

In very serious cases of crushes of an extremity symptoms are present, or other circumstances exist, which impose a consecutive examination; and in this connection one of the first questions which is raised is, at what time, how soon after the injury, should a critical inspection of the parts be made, permanent therapeutic measures adopted and a definite adjustment applied.

In my own practice there are two things on which chief reliance is placed as a guide which seldom deceives. These are, the patient's general condition and the local state of the parts.

If there are no serious constitutional symptoms; if the pulse is not accelerated, and the temperature above such limits as always attend febrile reaction, and if the injured part is devoid of severe pain, swelling, or signs of decomposition one may proceed with leisure, and wait for twenty-four, forty-eight hours, or more, before disturbing the dressings and reopening the wound. After twenty-four hours, and sometimes sooner, reaction has set in, the numbness over the injured part is now replaced by hyperaesthesia, and any motion of the limb is attended with much suffering. The parts are inflamed.

At this stage a consecutive examination is accompanied by such operative interference as a given case will require; therefore why some description of an anesthetic must be employed. At this time our examination must be critical and precise, for without this our relief measures will be misdirected, our patient's recovery will be retarded, and possibly his life may be further imperiled by another operation, made necessary by some oversight, in this examination.

For obvious reasons in this as well as the preceding manipulation of the limb full notes should be taken of all the details.—From *Medical Progress.*

TRICUSPID REGURGITATION.

By W. C. HUNTINGTON, Howell, Mich.

My object in writing this article is to draw out a discussion along a line on which my experience is at variance with the teachings of all the authorities that I have ever consulted.

It is very generally taught in our text-books that tricuspid insufficiency is more rare than any of the lesions of the left side of the heart, that when it occurs it is almost invariably secondary to lesions of left side of heart or of lungs, and that it tends more rapidly than the others to dropsy and death. It is also taught that there is normally regurgitation at the tricuspid valve.

Experience teaches me that whenever a tricuspid murmur occurs the valve is impaired and produces abnormal results, that primary tricuspid regurgitation occurs far more frequently than all other heart lesions combined, and that while uncomplicated by disease of left heart or kidneys it does not tend to dropsy but to a directly opposite dry-meated condition.

During four years (1889-1893) that I served on a pension examining board we recognized very few cases of tricuspid murmur, and one or two of these had been previously diagnosed as mitral insufficiency. At that time we did not examine the heart except when heart disease or rheumatism was claimed, or some symptom directed attention to the heart; but under the present administration we are required to examine the heart in all cases and give a complete description of it, whether normal or abnormal. Under this requirement our board has found a very large number of tricuspid regurgitant murmurs accompanied by conditions more or less abnormal.

As mitral regurgitation causes pulmonary engorgement with resulting dyspnea directing attention to the chest, so tricuspid regurgitation causes portal engorgement with symptoms directing attention to the abdomen and away from the primary cause of disorder; and so primary tricuspid insufficiency seldom secures recognition.

Since failure of the right side of the heart must be compensated in part by increased power of the left side, the resulting increased arterial tension promotes renal activity and drains the system of its fluids to an abnormal degree, rendering the other secretions less fluid than normal, and this, in addition to the fact that the engorged vessels of the intestines somewhat antagonize their muscular action, causes constipation; and constipation and engorged portal vessels cause hemorrhoids. In addition to this, abnormal consistency of the secretions with faulty intestinal digestion and the constantly loaded condition of the whole absorbent system cause impaired assimilation and resulting malnutrition. The first thing noticeable in such a case is underweight, even more than is apparent. Upon stripping there is evident lack of cellular tissue. The muscles are very clearly outlined and the veins are very distinct. The brachial artery can usually be seen in its lower portion when the arm is bent, and often the radial and temporal also, all of which are somewhat tortuous. The heart's impulse is visible at the xiphoid appendix and in the fifth space, a trifle to right of normal. The impulse may appear in both places at once or in each alternately, rising and falling with the movements of the diaphragm. While this is called enlargement to right, it is really displacement to right and downward equal to, or a little exceeding, the general enlargement of the heart, and is caused by a slight straightening of the arch of the aorta due to increased aortic tension and diminished pulmonary tension, just as the displacement of the apex outward and backward and slightly upward in mitral insufficiency is caused in part by increased curvature of the aortic arch due to diminished aortic tension and increased pulmonary tension. This displacement to the right in tricuspid insufficiency easily leads to error in diagnosis, as it keeps the apex within the normal limit and carries the tricuspid valve so far to the right that its sounds are liable to escape detection.

The above described displacement constitutes about the limit to which the heart can ordinarily go in that direction, and hence subsequent enlargement causes it to extend to left and downward, along the sixth space, and this leads to another source of possible error, for now the tricuspid sounds are transmitted so far to left that they may easily be mistaken for mitral or for both.

As the apex extends to the left the epigastric pulsation either disappears or becomes more diffuse.

When the displacement to right is greatest, the murmur is heard beneath and at both sides of the lower portion of the sternum, and consists of a more or less distinct rasping quality of the tricuspid systolic sound.

As the lesion increases the murmur usually grows softer and lower in pitch; when dilatation occurs it may disappear entirely, and thus produce another source of liability to error. As a tricuspid patient seldom applies for treatment of heart trouble until this stage is reached, or perhaps until mitral regurgitation is superadded, the opportunities for confusion from clinical experience are apparent.

The following rule will probably hold good as between these two valves: If the apex is high, it is wholly or predominatingly mitral; if low, it is wholly or predominatingly tricuspid. If the venous valves become incompetent we have venous pulsation. If the mitral valve also fails, vascular tension is lost and dropsy eventually supervenes.

There is usually no irregularity of pulse in these cases to direct attention to the heart, but its rhythm is in some cases modified synchronously with the respiratory movements, due to the assistance rendered to the right side of the heart by the pumping action of the respirations upon the circulation.

The pulse is usually a trifle rapid and thready, but is very little affected by standing or even moderately active exercise. Indeed, the pulse is sometimes slower when standing than while sitting, owing to the fact that the action of the muscles upon the veins assists the right side of the heart in its work.

The respiration corresponds with the pulse, and there is generally no complaint of dyspnea, but close questioning will usually disclose that he is "short-winded" on severe or prolonged exertion, especially if it involves the arms or chest, as in sawing or rowing.

The dyspnea of heart disease is characteristic. If it is mitral it is due to pulmonary hyperemia, and in the late part of its course is aggravated by lying down; but when it occurs in advanced uncomplicated tricuspid failure, it is due to pulmonary anemia and may be more or less relieved by lying down. Climbing stairs does not affect tricuspid dyspnea any more than any other equal exertion.

The abdominal percussion resonance is generally tympanitic, the epigastrium tender, and the liver sometimes enlarged.

The appetite is liable to be capricious, but averages fair. Enough food is consumed to produce good nutrition. The bowels are usually more or less constipated.

Such people drink very little, because the constantly loaded absorbents do not call for more. If more is drank than the appetite demands, the result is increased urinary secretion with augmented elimination. Digitalis has the same effect and is not adapted to uncomplicated tricuspid regurgitation.

I have never seen any evidence that tricuspid impairment resulted from acute rheumatism. It is known to be caused by lesions of left side of heart and of lungs, but since the etiology of emphysema is sometimes very obscure, it may not be unreasonable to suppose that it may sometimes be a result as well as a cause of tricuspid failure.

Compensation for tricuspid failure must be largely by the forces which carry on the return circulation. One of these is the hydrostatic action of respiration, and if, by severe labor or exercise, compensating respiratory development becomes excessive, we have permanent dilatation of air cells. Emphysema once established tends to increase the heart difficulty, and vice versa; and so it is almost necessarily progressive.

The state of nutrition is better in those cases in which the cause is apparent and recent than in those in which it is not. What are the probable causes in those cases in which they are not apparent? I believe them to be very generally the vicissitudes of childhood, such as whooping-cough, measles, pneumonia, la grippe, frequent attacks of acute bronchitis, and it seems not improbable that the crying and screaming of some children might be sufficient to cause it.

It is well known that children often have heart murmurs, and it is said that these murmurs disappear as the children grow older. It may be fairly questioned whether they disappear by complete recovery or whether it is by change of position, as the heart moves to right normally in childhood, and even abnormally in these cases, so that they are not recognized where first found. I believe that many of the transient murmurs reported are permanent tricuspids transmitted to different distances under varying circumstances. Incomplete recovery in such cases would affect the subsequent nutrition and habit of the individual through life.

I recently amputated an arm for a young man seventeen years of age, of delicate appearance, and a poor state of nutrition. There was excessive capillary oozing of dark, poorly oxygenated blood. On examination I was not surprised to find a very pronounced tricuspid murmur. On inquiring whether he had ever had whooping cough, the reply was that he had it very hard when a child, and had been subject to frequent attacks of acute bronchitis ever since.

I have under observation the case of a physician fifty years of age, on whom I found a tricuspid murmur with epigastric pulsation four years ago. The case remains unchanged, and although he is muscular and strong, there has been the same lack of adipose tissue and shortness of breath on severe or active exercise of arms and shoulders ever since childhood.

Another physician eighty-three years of age has had moderate chronic rheumatism for about forty years, and during the same time he has had frequent attacks of intermittent pulse with a crowded feeling at the heart. Whenever the heart symptoms appeared all other rheumatic symptoms would disappear, but would return at some other point as soon as the heart was relieved. I first examined his heart about one year and a half ago. The apex pulse is in the sixth space to the left of the mammary line. There is a distinct blowing murmur heard plainly over the entire right side of the heart from base to apex. This might easily be mistaken for a mitral murmur, but is unquestionably tricuspid. There is very great varicosity of the entire right internal saphenous vein, and also of the left one from the knee down, but there is no edema. There has been no dyspnea until within two months; it is now constant when he is not lying down, but is not increased by moderate exercise or even climbing stairs. Immediately after lying down it is increased for a few moments, and then entirely relieved so long as he remains recumbent. The valvular defect seems to have resulted from the rheumatism in this case, but a slight contracture of the left palmar fascia is the only other deformity. The degree of enlargement, taken with the moderate habits of the individual, indicates that the valvular defect has been of very long standing.

I have had a case under treatment for the past four years. He is seventy-seven years of age, and has always been very thin in flesh. He first noticed heart disturbance twelve years ago, while running to catch a train. There is incompetence of both propelling valves. His pulse is so irregular that at times it cannot be accurately counted. At such times the respiratory movements are as distinctly recognizable in the pulse as the heart pulsations. He has occasional short periods of prostration with edema of feet and limbs, but is easily relieved by suitable treatment. He has never had rheumatism, and I believe that the mitral trouble is in this case secondary to the tricuspid.

I recently had a patient who had three distinct regurgitant murmurs —aortic, mitral, and tricuspid. The lesions probably occurred in the above order. She got along without serious difficulty so long as the left heart was re-enforced by a competent hypertrophied right, but when the latter failed arterial tension was lost and dropsy supervened, which could not be controlled except for a few months.

Why does the human family differ so greatly from the rest of animate creation? Practically all other animals will fatten if liberally fed under favorable circumstances, but there is a considerable portion of the human race who cannot be made fleshy under any circumstances. I have recognized many such as having tricuspid insufficiency. While such people are never entirely well, they are seldom very ill and may live to extreme old age. Their maladies are mostly subacute and chronic, though they may suffer from myalgia, neuralgia, melancholia, and neurasthenia.

When primary, the tricuspid impairment has much less tendency to increase than that of the mitral valve. The disinclination to severe muscular exercise is salutary, and all muscular effort which does not interfere with respiration directly assists the right side of the heart in its work, while all muscular effort, except respiration, antagonizes the left heart while calling on it for increased performance.

Although the action of the tricuspid valve is more complicated than that of the mitral it is less powerful, and divides responsibility with so many other factors that it is easily compensated.

While severe and prolonged muscular effort is injurious, especially if it interferes with respiration, tending to increase the heart trouble, dilate the veins, and perhaps cause emphysema of lungs, all moderate muscular exercise which does not interfere with respiration is beneficial, and a sedentary occupation is harmful, inducing venous stasis, especially portal, constipation, and impaired oxygenation.

A moderate cup of coffee in the morning and of tea at noon, both by infusion and not decoction, promote good cheer and vascular activity through the day, and the resulting reaction allows of complete relaxation and rest at night. The best result secured from the coffee, in these cases, however, is in its regulating effect upon the bowels. This seems to be largely due to its effect on the circulation and muscular coat of the bowels, as it does not seems to possess any cathartic principle sufficiently active to produce such an effect. The amount taken should never be enough to cause any tremulousness, nervousness, or digestion disorder.

Such people are especially susceptible to the effect of these stimulants, and they are harmful if taken late in the day and especially in the evening, as they induce wakefulness and activity of circulation when there should be rest and recuperation from complete relaxation.

The heavy breathing of deep sleep with the air passages partly obstructed by relaxation increases the hydrostatic effect of respiration on the circulation, and thus largely relieves the heart of its burden during sleep; hence we see that complete heart rest can only occur as a result of deep slumber. This effect is so pronounced in the deep slumber of childhood that the respirations can be frequently recognized in the pulse. Might not this principle be usefully extended in the case of dilated heart by a suitable application and adjustment of the pneumatic cabinet?

Regarding the question whether there is normally regurgitation at the tricuspid valve, it seems temerity to question the authority of some who take such ground, and who, in doing so, claim that it is necessary to prevent injury from excessive effort of right heart; but a study of the function of the columnæ carnæ seems to show that this valve has an automatic safety action and does not depend upon a defect for its salvation. While I confess to never having seen the function of these bodies explained, a close study makes it seem too obvious to allow of a difference of opinion. The fact that these columns are muscular implies that they contract and relax; their position is such that the direction of their action is opposed to that of the ventricle, and thus, like the compensating pendulum, they adjust the lengths of the chordæ tendineæ, and under normal conditions secure perfect working of the valve. As these columns are composed of the inner ends of the longitudinal fibers of the ventricle, their action probably corresponds in time and power to the action of those fibers, and when the ventricle contracts powerfully the columns contract powerfully also. As the valve is re-enforced by the pressure in the auricle, the tension to which it is ever subjected is only equal to the difference between that in the auricle and ventricle.

In nearly all cases where the ventricle is compelled to act with increased power the pressure within the auricle is correspondingly increased and becomes more continuous, consequently the strain upon the valve would not increase in proportion to the increased contraction of the columns, and hence before the danger-point would be reached the segments would be retracted and the valve thrown out of commission, the action being very similar to that of the governor of a windmill; but when there is obstruction to the pulmonary circulation from lesions of lungs or of left heart, the tension within the ventricle is increased more than in the auricle, and in these cases the valve eventually yields.—*The Medical Age.*

THE RELATION OF EYE-STRAIN TO EPILEPSY, INSANITY, AND ALLIED CONDITIONS.*

By THOMAS P. SATTERWHITE, M.D., Louisville, Ky.

In presenting the subject, "Will eye-strain produce epilepsy, insanity, and other neurotic troubles?" I do so with the idea of eliciting a discussion upon this important subject in order to determine if possible whether there should be a competent oculist on the medical staff of each insane hospital in the State.

The views expressed in this paper are largely those of Dr. A. L. Ronney (in his publication on "Eye-strain in Health and Disease"); also of Drs. Boyers, Stephens, and others, who have had considerable experience in this line of work, and who have recorded unquestionable evidence of recovery from various neurotic troubles, embracing epilepsy and insanity, where the patients had been under the care of intelligent physicians, and whose testimony confirms the belief obtained by the adjustment of vision, when medication, rest-cure, travel, and other means had failed.

If it is the opinion of the members of this society that eye-strain may produce neuroses, I desire to ask your assistance in the matter of adding a suitable specialist to the medical staff of the Central Kentucky Asylum for the Insane. This innovation, if adopted as part of asylum treatment, I confidently believe will greatly augment the percentage of recoveries.

The following is the present mode of adjusting glasses at the asylum: The patient is allowed to select from the supply of spectacles which may be in stock a pair that comes somewhere near suiting his or her vision; and if there be none in stock which will answer the purpose, has to do without glasses.

It is unnecessary to say that this method is not calculated to be productive in relieving eye-strain, and that it may in many instances increase it; therefore a competent oculist could be of more benefit to the patient, in not a few instances, than the physician or surgeon.

In every institution for the treatment of nervous diseases there should be a competent person to examine the eyes of each patient at the time of admission for treatment, even though the eye may not appear to be the disturbing element. We know that by the system of exclusion we may arrive at the cause of disturbance, and no matter how infinitesimal the number may be in which the trouble is due to eye-strain, if they can be relieved by proper adjustment of vision, most assuredly this means should be employed. We know a great many patients require glasses to see how to employ themselves in various ways. Every thinking man, whether familiar with asylum work or not, knows that diversion for these deplorable people is absolutely essential, and each one who has a vestige of mind left should be enabled to see how to employ himself in some manner.

---

*Read before the Louisville Clinical Society.

The literature of medicine goes to prove conclusively that the duration of life is materially shortened by nervous debility and the disease which it entails, therefore any factor in its causation ought not to be overlooked.

If the view that eye-strain is a frequent cause of functional nervous derangements be correct beyond the possibility of a doubt, it is not difficult to foresee that hope of marked relief, or of ultimate recovery, is practically extended to many hopeless sufferers upon whom drugs have exerted little or no benefit.

To illustrate: The lungs do not make us breathe except indirectly, by asking the brain to start the necessary muscles into action. The stomach does not perform its function until after the brain has been requested to turn on the blood-supply in sufficient quantities to produce the requisite amount of gastric-juice. The intestine performs its incessant worm-like movements by no inherent power of its own. The heart keeps up its rhythmical beating only when permitted to do so by the great center of nerve force.

Now is it inconsistent with physiological principles to advance the view that any excess of nervous expenditure to one organ, over the normal amount which should be furnished, is done at the expense of other organs, which in consequence sooner or later must suffer? No one can draw incessantly upon his reserve capital of nerve force without incurring the risk of ultimately exhausting it. A bankruptcy in the reserve capital of nerve force entails untold ills to the individual. The day of reckoning is postponed in any given case in direct proportion to the drafts made upon the reserve and the amount of such reserve. This may help to explain why some escape indefinitely, while others are precipitated into indescribable distress when life is hardly begun.

If the bearing of eye-strain upon the problem of nervous expenditure does not seem quite clear, I will call attention to some facts relating to the more common ocular defects.

We know that some persons are made dizzy by looking from a height or inspecting a waterfall; others suffer pain in the head and are made sick at the stomach by trying on a pair of spectacles which are not adapted to their eyes. Strabismus is often due to some defect in the eye or weakness of its muscles. Perhaps it has never occurred to most persons that sight is the only special sense which we use constantly; fortunately for our nervous system the normal eye takes pictures of surrounding objects without muscular effort when the object is more than twenty feet away, hence the larger part of each day the normal eye is passive and is practically at rest.

I can easily demonstrate that disturbed brain action from eye-strain may in a healthy person produce headache, vomiting, dizziness, neuralgia, and even epilepsy, insanity, chorea, and other troubles.

When a state of perfect equilibrium is impaired from either a weakness or abnormal tension of some muscle of the eye, the effects are apt to become manifested sooner or later.

Oculists and neurologists not infrequently discover defects in the eye never dreamed of by the patient himself. No one can deny that people sometimes live for long periods in houses with sewer gas, and in the most malarious regions, without apparently suffering in consequence, yet no intelligent man would attempt to prove to-day that these poisons are delusions because some people have escaped their influence. We must admit that eye defects are liable to become causes of impaired nervous energy because they demand an excess of nervous expenditure.

A general proposition regarding the treatment of nervous troubles may be thus stated: Every reflex cause that can be detected in an epileptic, mentally disturbed, or choreic person ought to be removed. The amelioration of these troubles may not come at once, and it may not come at all in a small proportion of cases; but an effort should be made in each case to give nature every possible chance to reassert herself by relieving the nerve centers of reflex irritation. It is not always possible to state that the removal of the eye-strain alone in unsuccessful cases has completed the treatment, nor is it fair to infer that the eye work has been unproductive of any benefit.

I will give a description of a case of chorea (commonly called St. Vitus's dance), selected out of several hundred recorded cases, each being identified by initials and residence, with letters in many instances from patients and their physicians.

Mr. C———, a minister of the gospel. For about twelve years his family had noticed frequent facial contortions which he was unable to control. A trip to Europe and little writing in his study prevented its increase for about four years. After more active labor the facial contortions grew rapidly more exaggerated in character, every feature becoming horribly distorted; the eyes would close, the forehead become terribly wrinkled, and the nose and mouth would assume attitudes which no one could possibly imitate. The hour of retiring was particularly dreaded, because the facial spasms were terribly persistent and severe as soon as his eyes were closed and a recumbent position was assumed. The facial contortions were always least severe in the morning and grew more severe as the day progressed. No medical treatment had ever benefited the patient. Treatment and result are as follows:

A partial tenotomy was first performed; the facial spasms ceased in an hour, and no sign of chorea was observed for two days. On the third day a very slight twitching about the mouth developed; another partial tenotomy was performed. After the second operation the patient had few if any choreic movements. He stated that unless excited his face remained absolutely quiet, and that for the first time he had that day been able to attend a meeting of ministers and look them in the face without facial spasms while discussing church matters. Thus in less than one week were the contortions of his face almost completely arrested.

Insomnia.—Clinical evidence shows that a large proportion of subjects affected with persistent insomnia suffer from some congenital defect of the eyes, or from an improper adjustment of the muscles that move the eye.

When we stop to reflect we can understand how every letter on a printed page, as well as every object on the street or in our homes, requires a more or less perfect adjustment of the complicated muscular apparatus that so regulates the eyes in relation to each other as to enable them to see separately and yet perceive a single image. The total aggregate of such perceptions during the sixteen hours of each day that we use the eyes is enormous, and, as I have said before, three factors enter into the proposition as to how long a time can elapse before the serious influences of such a leak of nervous energy will be felt in any given case where the eyes or the eye muscles are abnormal:

1. How much excess of energy over the normal amount is required to compensate for the defects connected with the sense of sight.
2. How much reserve capital of nerve force the individual starts out in life with.
3. How much nerve force the individual can generate day by day to meet the daily expenditure.

Let me report one case in this connection.

Mrs. B———, aged forty years. The breakdown in health began twelve months ago; it was attended with an extreme and persistent loss of sleep; an utter inability to read or sew; a more or less constant headache; an inability to concentrate her intellectual faculties for any length of time; and an aggravated type of mental depression. After any attempt at study she would lie awake most of the night. Graduated tenotomy was performed, and in five months she was able to fill all her engagements without any return of her bad symptoms. During one of her last visits she said: "I am stronger and have better health than I have had for many years."

Epilepsy.—No sadder misfortune can befall a human being than to develop epilepsy. Sooner or later an epileptic becomes aware that his attacks are horrible to witness, that they are liable to occur at very unfortunate and unexpected moments. Years of drugging and benumbing the cerebral centers is not curing the disease; such a principle of treatment is absurdly irrational and opposed to physiological research. To treat epilepsy by drugs without searching for all exciting causes is no longer creditable to the medical attendant. In a case referred to me in 1892, the following letter of Dr. Ellis W. Hedges, of Plainfield, N. J., received in 1896, reports the results of treatment:

"In reply to yours of July, 1896, I can only report fully in regard to one case. Mr. B——— has been perfectly well ever since. He works every day and has not had a single convulsion.

"Mrs. G——— moved to Buffalo about two years ago. I have heard nothing as to her condition. Just previous to leaving she called upon me and declared that she was a different woman mentally and physically since the operation—that it seemed to her as though she had been living in a dream for years past.

"I have watched these cases for years and saw them grow steadily worse under various forms of treatment, and I am convinced beyond doubt that at least some cases of epilepsy can be cured by proper operation done upon the eyes."

Insanity.—Many victims of insanity, especially some of the milder types, clearly show by their history that the mental disturbance did not develop while in perfect health, but that it was preceded by a decided nervous debility; therefore nervous prostration and insanity seem so closely related in many instances that I will speak of these types together.

The clinical histories of two cases that I shall report in this chapter are of this type. Neither of these cases justified much hope, if any, of ultimate recovery. They presented symptoms that pointed in the strongest way toward the existence of organic cerebral disease. They were hard to control by experienced attendants; they had not been benefited by medication, although they had been treated for some time by men of reputation. One was in such an extremely bad physical condition that probable duration of life seemed near its close, and in each instance the eye treatment was begun purely at the solicitation of friends rather as a last hope than from faith in its curative results.

One of these cases presented many of the typical symptoms of paresis, a disease that is generally accepted by physicians as a hopeless malady. Both of these cases were relieved.

Some years ago Weir Mitchell brought into prominence the rest-cure as a means of restoring health. It cannot be denied that by this method of treatment thousands of sufferers from nervous prostration have been greatly benefited or restored to health, but they have had to bear with patience its many unpleasant features for months at a time, isolating themselves from their families, deprived of writing to them, often confined to bed, fed under explicit directions, a trained nurse to direct them and practice massage and electricity as a substitute for exercise, and in no way allowed to use their eyes for reading, sewing, playing games, or other amusements. That this distinguished neurologist is not indifferent to eye-strain is evidenced by the fact that to-day he has the eyes of many of his patients very carefully examined during or prior to his rest treatment; possibly he has found that his cures are more rapid and permanent when eye-strain is corrected early than in years past when the testing of the eyes of neurasthenic patients was less frequently and certainly less thoroughly done even by oculists of repute.

I find in my case-book several letters from physicians that narrate equally startling results from the relief of eye-strain in cases of extreme mental disturbances. Furthermore, similar results have been published by others from time to time within the past decade without apparently attracting the amount of attention that such results should warrant.

I feel sure that in the future more attention will be paid to the eyes of inmates of our insane asylums. In the past, as far as I can learn from medical directors of such institutions, nothing has been attempted in this line in a systematic way, either in this country or in Europe. I have pleaded with the medical superintendent to obtain and publish a complete set of eye tests, by the new methods, of insane patients under their care, but I have been met with the statement that the resident medical staff was not competent to do the work, and the labor of doing it was too great to undertake without a special appropriation to meet the expense of employing competent aid in making the investigation.

The question was naturally asked, Why do not asylums have a specialist in this new method of relieving eye-strain? Their response was that it took some time to master the science, and it was an exceedingly difficult one; that it took great patience and labor and knowledge of higher mathematics; and that there was not a college in the land that has or would allow the instruments necessary to teach it to be attached to the curriculum of study. Then they said, Did it not take Lister ten years to teach the profession if the antiseptic method was to be tested that they must wash their hands with great care, make their knives aseptic, and follow out the published plan of procedure with due regard to detail before the results obtained could be worthy or in any way reliable as a basis of success? Was not Harvey despised because he advocated the circulation of the blood, and McDowell condemned to professional ostracism when he first practiced ovariotomy? Did not Jenner, who stood high in professional esteem, incite to rage the populace when he advocated and practiced vaccination?

The treatment of this ocular condition is based upon facts which can be determined with the same scientific precision as the computation of an astronomical problem; it is supported by well recognized physiological laws; it has yielded, and is yielding daily, relief to many individual cases called from suffering humanity which medicine has failed to relieve; it has lived and steadily made progress year by year in the face of bitter and organized opposition.—*The Medical Age.*

DIFFERENCE IN THE CAUSE, SYMPTOMS, RESULTS AND TREATMENT OF GRIP AND "COLDS." *

By WM. S. GORDON, M.D.,

Professor of Physiology and Clinical Medicine, University College of Medicine, Richmond, Virginia.

As the time allotted for the reading of papers is too short for a full treatment of the subject under discussion this evening, my object will only be to emphasize the main points mentioned in the title of this article.

The cause of an ordinary cold, or coryza, especially during epidemics, is supposed by some observers to be a microbe. While there may be grounds for this belief, I am inclined to the opinion of those who claim that a cold is the result of vaso-motor and trophic disturbances of various portions of the respiratory mucous membrane. So far, a destructive microbe has not been discovered, while the nature, course and symptoms of the disorder can be explained from other standpoints than that of an infection. All of us know the intimate connection through nervous agency, between the skin and the mucous membrane. One of my patients, an aged gentleman, will frequently suffer from diarrhœa when a damp, east wind is blowing. In recent years he has enjoyed comparative immunity by protecting the abdomen with flannel, thus preventing the irritation of the sensory nerve terminals in the skin, with the consequent reflex effect upon the vaso-motor centers. Another patient will suffer in the respiratory tract from the same cause; while another may be affected in the urinary tract. Damp feet, a draught of cool air on a limited portion of the exposed cutaneous surface, and the sudden transition from a very cold into a very warm atmosphere are all stimuli for reflex action resulting in what is termed a "cold." Preceding the immediate cause is, in every instance, a lowered resisting vitality, with constitutional weaknesses in the affected portions of the body.

---

*Read before the Richmond Academy of Medicine and Surgery, March 27, 1900.

It is almost conclusively established that one cause of influenza is a microbe designated as Pfeiffer's germ—a short and extremely minute bacillus, which is supposed to enter the body through the nose and mouth, or, as held by some, even through the conjunctiva, and which, in certain forms of the grip, is associated with, or prepares the way for, the activity of the pneumo-coccus, and the pus-forming microbes.

The difference between the symptoms of a cold and a mild form of influenza, when the latter disease is prevailing, are often indistinguishable in the early stages. The sneezing, dry mucous membrane, tightness over the frontal sinus, lachrymation, discharge of mucus, chilliness, fever, aching in the muscles, anorexia, coated tongue, impairment of smell, taste and hearing, and other effects, are common to both ailments; and unless we observe the well-known sequelæ of influenza—which are at times absent—it is impossible to determine the exact nature of the disease. If post-grippal results are manifested, we are able to diagnose last instead of first.

The symptoms of influenza, in its various forms, are well-nigh innumerable. For convenience sake, therefore, and for the saving of time, I shall refer to the leading characteristics of the disease in the respiratory, gastro-intestinal, and nervous types. In the first division we have the ordinary coryza symptoms, frequently intensified; conjunctivitis; otitis media; tonsillitis; pharyngitis; laryngitis; tracheitis; bronchitis, and catarrhal pneumonitis. The mucous membrane of the throat is at times glazed and dry, intensely red, congested and painful, the trophic disorders being well marked, of long duration, and almost defiant of treatment. In other instances an excessively thin, or thick, mucus, often streaked with blood, is secreted. The flow from the nose may be clear, profuse, and almost constant. Sudden aphonia; distressing cough, disproportionate to the local inflammation; obstinate tonsillitis, follicular or parenchymatous; consolidation of the lower lobes of the lungs; and, occasionally, rapid, complete, and fatal occlusion of the air-cells, are prominent features. The catarrhal symptoms are, it is seen, marked by an intensity, diversity, long duration, and tendency to recurrence not observable in the simple inflammatory affections of the respiratory tract.

In the gastro-intestinal form one or more of the following conditions may be present: Nausea; vomiting; pain, mostly in the abdominal walls; fermentation; with resulting flatulence; diarrhœa; acute inflammation of almost any of the internal abdominal organs or structures. The tongue may be moist and almost normal, but in the majority of cases is coated brown or white, and frequently dry. When diarrhœa is present the stools are light-colored, frothy, and offensive. Eructations of sulphuretted hydrogen are common.

The nervous form is characterized by frontal, occipital, vertical, or cervical pain; neuralgia of the trigeminus; myalgia in any portion of the body, with a sense of aching; weariness, and soreness in the muscles; intercostal neuralgia frequently; inflammatory affections of the nervous structures; mental depression, amounting occasionally to melancholia; irritability; and indeed any symptom of neurasthenia, hysteria, or hypochondria.

In general, the disease is marked by suddenness of invasion; chilliness, followed by more or less elevation of temperature; aching of the limbs, or other portions of the body; marked asthenia, and tendency to relapse. Added to these are many of the symptoms above mentioned. Fever may be absent, or it may assume a typhoid type. Many cases are of a chronic or sub-acute nature. During convalescence from one form of the disease, another form may rapidly supervene. In a recent case, now under my care—that of a little girl four years of age—the disease began with throat symptoms, followed by severe bronchitis and middle ear inflammation, with rapid rupture of both drum-heads. After the fever had subsided, and while sitting up, she was seized suddenly with severe pleurodynia and a temperature of 105° F., the temperature remaining high after the pain had been relieved. In another case characterized by two attacks, two weeks apart, of profuse diarrhœa, nausea, and abdominal pain, the catarrhal form followed.

An ordinary cold is usually unattended with serious results, except when the Eustachian tube, middle ear or naso-pharynx is repeatedly involved. The sequelæ of influenza are legion, the most prominent being the cardiac weakness; mental depression and prolonged impairment of the functions of the nervous system; chronic or subacute inflammation of almost any of the organs or structure of the body; and a tendency to recurrence.

From the multiplicity of symptoms, their general distribution, and their peculiar nature, it is evident that the poison of influenza is exerted upon the structures that regulate the functions of the organs involved, and, consequently, the conclusion is inevitable that the nervous system is primarily and chiefly involved. The medulla is especially responsible. The action of the germ of this organ alone will account for a large number of the trophic and vaso-motor disturbances, while involvement of the centers for vomiting, respiration, cardio-inhibitory action, and other functions carried out by the pneumogastric nerve, will explain a large majority of the symptoms. The cutaneous symptoms can also be thus explained.

The disease is unquestionably infectious; is conveyed from one person to another in various ways; and has a period of incubation differing in different cases. I am not prepared to assert, however, with some observers, that the germs are not borne in the air at long distances; although it is not within the scope of this paper to advance the reason for such a belief.

The treatment of a cold is simple and usually efficient if begun early and carried out faithfully. A full dose of quinine and Dover's powder; a cholagogue if needed; hot drinks; a hot bath; and immediate recourse to the bed will frequently abort a cold in from twelve to twenty-four hours. Phenacetin and acetanilid are useful. A spray of menthol and camphor in neutral oil is also valuable, cocaine being added if indicated and advisable. Two or three days' rest in bed is invaluable, and will often save days or weeks of suffering and discomfort. In the later stages the symptoms must be appropriately treated as they arise.

There is no specific treatment for influenza. The mild cases can be treated as ordinary coryza. In all cases I regard rest in bed as one of the most important measures, not only for the immediate effect upon the disease but as a preventive of the sequelæ. When indicated, laxatives and cholagogues prepare the way for efficient action of other drugs. In the affections of the respiratory tract it is well to use an antiseptic and soothing spray in the nares and throat, inhaled into the lungs. If the fever is mild, with slight cough, and the pain is not marked, I usually administer a mixture of ammonium chloride, wine of ipecac, spirit of nitrous ether, and solution of ammonium acetate. Bromide of ammonium can be added for headache or nervous irregularity. At other times the ipecac and nitre can be advantageously combined with solution of potassium citrate, especially when the urine is scant and high-colored. Warmth to the body, nourishing food, and quietude, physical and mental, are powerful adjuvants. In the bronchial and pulmonary complications mustard and flaxseed meal poultices, properly made, applied, and renewed, are highly beneficial. Iodine to the chest is often useful.

When the fever is high and the pains severe, I have found phenacetin, or acetanilid, with salol, quinine, codein, caffein, or strychnine, to meet the requirements. Hypodermatics of morphia and atropin may be necessary, the latter drug being useful in the profuse sweating that may occur.

In the gastro-intestinal form I have usually begun the treatment with calomel, which excites the secretions, acts as an antiseptic, and often allays nausea. Opium, bismuth, salol, and chalk mixture control the pain, check the diarrhœa, and have an anti-nauseant effect. Turpentine stupes, and dry or moist heat to the abdomen are valuable in relieving the abdominal pain.

No matter what the special indications may be, the physical weakness must always be borne in mind, and will often require early attention. Strychnine, ammonia, or alcohol, will each have its place at various times. Tonics are indicated in most cases during convalescence. Patients are liable to recrudescences and relapses, and are often left in an unrecuperative, worrisome, and generally discomposed condition. A change of scene is often the best remedy. Chronic sequelæ must be appropriately treated.

BOTTINI'S OPERATION FOR THE CURE OF PROSTATIC HYPERTROPHY.*

By WILLY MEYER, M.D., New York.

Professor of Surgery at the New York Post-Graduate Medical School and Hospital; Attending Surgeon to the German and New York Skin and Cancer Hospitals; Consulting Surgeon to the New York Infirmary.

Mr. President and Gentlemen:

Bottini's operation for the cure of prostatic hypertrophy has come to stay. The experience of the originator of the method, covering a period of more than twenty years, and of many operators all over the world during the last three years, has proven the value of the procedure beyond the shadow of a doubt. If properly carried out in a suitable case, Bottini's operation *can* cure the patient afflicted with prostatic hypertrophy. It, therefore, clearly belongs to the class of radical procedures that have so far been devised for the treatment of this trouble. And it can cure such a patient in a comparatively simple way at a stage of the disease when even the most enthusiastic advocates of prostatectomy would not propose the operation, and the patient surely would refuse to submit to it; it can cure when prostatectomy might be impossible on account of, for instance, the too great softness of the gland, or of the too far advanced age of the patient. What remains to be done is to give Bottini's operation its proper place among the various radical operations for the relief of prostatic enlargement, to determine its proper indication.

Certainly this operation must not be done indiscriminately. The cases must be carefully selected, the same as has to be done for prostatectomy. Nor do I believe that the latter procedure will ever be entirely supplanted by Bottini's operation. But we shall have to learn which class of prostatic enlargement will be suitable for the former and which for the latter method of operation. It will, no doubt, take us a good while to determine this definitely, since nearly every case of prostatic enlargement in the advanced stage has its peculiarities, and is different in some respect from every other. A much greater series of cases will have to be operated upon, carefully observed, collected, and unbiasedly published by each individual operator, before we shall learn to decide this question of indication. I personally am inclined to believe, however, that the result of such investigation, based, not on "enthusiasm," as is so often claimed by the opponents of Bottini's operation, but on cold facts, will tend to lessen the indication of prostatectomy and establish the necessity of early operation for the disease in question according to Bottini's method.

As regards the results so far obtained with Bottini's operation, they have demonstrated: (1) that the urinary troubles of prostatics are not dependent upon a weakness of the muscles of the bladder, due to arteriosclerosis (Guyon and Lannois' theory), but are the direct result of a true mechanical obstruction to the normal outflow of the urine at the neck of the bladder, viz., the enlarged prostate gland; (2) that we are able to overcome this mechanical obstruction in a comparatively simple manner, namely, by the multiple division of the swollen gland with the galvano-caustic knife, which latter is part of a modern and reliable instrument; (3) that we can generally accomplish this without any additional operation on the cords, testicles, or bladder; (4) that we have every reason to expect that, if the desired result of the operation be once thoroughly obtained, the cure will in most cases be a permanent one.

---

*Read by invitation before the Medical and Library Association of Detroit, February 26, 1900.

In view of these facts it becomes the duty of every one who takes an interest in the further development of this procedure to give a résumé of his work from time to time, and make known the conclusions he draws from his experience. A proper comparison and study of these conclusions of the various operators will call forth suggestions as to the still further improvement of the technique of this delicate operation, and will place the indication for its performance on a firmer basis.

This is all the more important as there still are colleagues who not only condemn the operation as such, but deny that it does or ever will deserve the designation "radical." One of them recently claimed[1] that a cure could not be obtained by the operation, because the division of the prostate gland with the galvano-caustic knife could never effect "the restoration approximately to its normal position of the attachment of the vesical muscle to the prostate." This he considers one of the essential points in curing prostatic hypertrophy by direct interference. Of course, the argument is advanced on purely theoretical reasoning, according to the doctor's own statement. The author of the dictum, as reported in the *Medical Record*, "had done the operation but once. In spite of all efforts, the result was most unsatisfactory. He had seen several cases which had been operated upon by this (Bottini's) method by well-known surgeons, and in all of these the later results of this operation had been unsatisfactory. The operation did not promise to accomplish sufficient drainage to the bladder. The best that could be said for Bottini's operation was, that it caused temporary amelioration in the symptoms of retention. He desired to protest against the views which were being so freely expressed, by men whose opinion was entitled to respect, in favor of this operation; too much had been claimed for it. . . . It was a good thing to be progressive and to try new things, but it was most unfortunate to permit our enthusiasm to interfere with our scientific judgment."[2]

How a medical man can make so sweeping a statement in face of the entirely different experience we find published by surgeons all over the world, I cannot understand. He either did not follow the recent literature on this subject, or he refuses to accept as true the statements made by some of the most conscientious and unbiased observers. However, with purely theoretical reasoning and sweeping statements, one can no longer nullify such absolutely positive and favorable results as have been achieved with Bottini's operation here and abroad. That time is past.

---

[1] Report in *Medical Record*, December 30, 1899.

[2] The doctor's part in the discussion was read from a type-written manuscript and then handed to the gentleman representing the *Medical Record* at the meeting. The report, as printed, is therefore authentic.

In view of the fact, however, that there still are such disbelievers among us, I deemed it my duty again to come forward and tell what I have learned regarding this operation in the course of my experience, which now covers thirty operations on twenty-four patients. Hence it was with a great deal of pleasure, indeed, Mr. President and gentlemen, that I accepted your kind invitation to come to Detroit and address you on a subject of my own choice. I really could find no better one than that now before us. I dare say it is superfluous for me to tell you how highly I appreciate your courtesy, which enables me to lecture here to-night before so distinguished a body of men. I know that the interest of the profession in the West for this fascinating procedure has been great from the start, that is, since the time when Freudenberg of Berlin revived it, and the first Bottini operations on this side of the ocean were done in New York in the fall of 1897.

Bottini's operation, at first glance, appears to be a very simple interference indeed; and while this is true of its immediate technique, it is by no means so with regard to many of its details. The point in this operation, the same as in every other, is not so much to do it, but to do it properly. And this certainly requires a great deal of personal experience, especially, yet at present, when the patients afflicted with a hypertrophied prostate do not apply, as a rule, to the surgeon for relief until the disease has reached a very advanced stage. If we extirpate a vesical growth, or if we crush and evacuate a stone from the bladder, we know more or less what we have accomplished. We see the result of our work before us. Barring unforseen complications, we are able to predict, with a reasonable amount of certainty, the future course of the disease. Not so with Bottini's operation. It will be a long time, I think, before we shall be able to state a definite prognosis in a given case immediately after the operation has been performed. The patient as well as the doctor must await further developments. It is just this uncertainty, however, that makes the after-treatment of the operation so interesting, and that, it the outcome be successful, gives the surgeon an amount of satisfaction that he can rarely hope to find in any other branch of operative surgery.

In order to unroll before your eyes a proper picture as to the present status in the evolution of Bottini's operation, it appears to me best to review, as briefly as possible, the different phases of the technique of the operation as they present themselves to us during its performance. This will enable us to determine, to some extent at least, how we can hope to avoid complications during the after-treatment, how we can hope to bring to the patient not only partial and temporary, but total and permanent relief, and that by means of one single operation.

I. Preparation of the Patient.—The patient is prepared in general the same as he is for any other surgical procedure. On the day prior to operation the bowels are thoroughly emptied, and the whole body is cleansed in a lukewarm bath. Shaving is unnecessary, as is also fasting. Local anæsthesia suffices for the operation. Fifteen grains of quinine are given on the night preceding the operation, eight more about one hour before the latter is done. As Nitze has found in his intravesical mode of removing benign tumors of the bladder with his operating cystoscope, internal administration of quinine prior to operation is the best prophylactic against the appearance of the so-called urethral fever. If one wants to be especially careful, the quinine is administered a number of days in advance of the operation, best, it seems, in connection with two or three grains of methyl blue (Freudenberg). See below under "urethral fever."

II. Instruments.—As stated in my paper read before the New York Academy of Medicine, November 3, 1898,[1] Bottini's incisor, as modified by Freudenberg, is now manufactured in New York, in a most satisfactory way. In my last twelve cases I have made use of this incisor and have not had a single complaint to make of it. Once only within the last year did it become necessary to have the incisor repaired, the knife not sliding in its groove with sufficient ease. For safety's sake, however, I invariably have two instruments on hand for every one of my operations; for it could well happen that the operator or his assistant might drop the instrument, or injure a part of it, etc., and thus the operation would be rendered impossible for that time. I certainly have derived great comfort from the sense of security afforded by the presence of a second instrument, the proper working of which I had also previously tested, to fall back on in case of an accident to the first. The incisor I use—which is a copy of that made by Kiss, of Berlin—can be easily unscrewed and sterilized in boiling water.[2]

A very important point is the proper heating of the knife. Recently I was informed that a colleague in Boston had had trouble with the incisor made in New York. Great difficulty had been experienced in extracting it, and when finally removed from the urethra it was seen that the blade had bent sideways. I fancy that in this instance too much current had been applied. It can be readily understood that if we overheat the knife, a slight unintended twist of the shaft, the handle of which rests in the left hand of the operator, or a sudden move on the part of the patient, may turn the knife sideways. On its return trip through the prostate gland it will then not re-enter the groove at the beak of the female part. The best means of heating the knife is certainly the current supplied by a central station. With the help of an alternator and rheostat we have full control of it and an inexhaustible, steady supply. Unfortunately, it is not everywhere at hand. Hence we need a storage battery. The one with an amperemeter, as recently brought out by me, best answers the purpose, I think.[3] It gives 50 amperes, and if properly charged will furnish sufficient current for the work. It must be well taken care of, however, a weakness which it shares with all other batteries. Special directions are sent out with each battery. If they are properly followed, many repairs and consequent annoyances to the operator will be avoided. To guard against possible disappointment, it is advisable to recharge the battery the day previous to the operation. When using two 50-candle-power lamps it will take ten hours to charge the battery; five hours when two 100-candle-power lamps are employed. When fully charged, the battery will store sufficient electricity to do three successive operations, each lasting about ten minutes; but if they are not done on the same day, recharging is advisable, for the current steadily diminishes during non-use.

---

[1] "Personal Experience with Bottini's Operation in the Radical Treatment of Hypertrophy of the Prostate." *Medical Record*, January 14, 1899.

[2] *Cf.* Author: "Bottini's Galvano-Caustic Radical Treatment for Hypertrophy of the Prostate." *Medical Record*, March 5, 1898, p. 327.

[3] The addition of an amperemeter to the battery used for Bottini's operation, we owe to Freudenberg.

To demonstrate the importance of personally supervising the charging of the battery in cases in which the street current is not available for doing the operation, I will relate the following instance: Recently a colleague who, with me, believes in the efficiency of Bottini's operation, told me that the storage battery, as designed by me, had given out in the midst of the operation, and therefore could not be looked upon as a reliable supply. Upon my query whether he had charged the battery himself, he answered that it had been sent to him with the statement that it was properly charged. On further inquiry I learned that the company which had furnished the battery was not in a position to charge batteries, for the reason that it was not connected with the street current, and that it therefore sent all batteries entrusted to it for charging to another concern. I am sure my friend would have been saved the annoyance above mentioned had he personally supervised the charging of the battery. The only disadvantage of this battery is its weight. It is heavy. Experience has shown, however, that cells of smaller size cannot be trusted for this particular kind of work.

III. Operation.—Bottini's operation is certainly one of detail. "The oftener I applied the galvano-caustic incision," says Bottini,[1] "the more I became convinced that the technique requires adroitness and care in order to avoid annoying surprises. To be successful with the operation is not mere chance, but the result of careful study and conscientious performance." I therefore do not hesitate to describe to you minutely all the various steps to be observed in the course of the procedure, even at the risk of overtaxing your patience.

I personally carry the operation out in the following manner: The surgeon, after proper sterilization of his hands, should stand on the right side of his patient, who is placed on a table and covered below and above the pubes with sterilized sheets or towels. The glans and prepuce are thoroughly cleansed with soap and water, bichloride solution, and alcohol, the same as is customary in our daily operative work. The battery is placed on a table to the left of the patient, so that it is always in full view of the operator. A soft-rubber catheter which has been boiled for three to five minutes is taken from the bowl of sterilized water and handed to the surgeon, its tip being lubricated with boiled glycerin or sterilized paraffin. It is first introduced down to the cut-off muscle, and the anterior urethra is then irrigated with a two-per-cent. sterilized boric-acid solution. After that the catheter is pushed on into the bladder. If the soft-rubber catheter cannot successfully overcome the obstruction at the neck of the bladder, a Mercier's gum-elastic—which I keep disinfected in a five-per-cent. solution of formalin with glycerin—must be used. Then the bladder is thoroughly irrigated with the same two-per-cent. sterilized boric-acid solution, until the water returns clear. As soon as the latter has been accomplished, 50 c.c. of a three-per-cent. sterilized boiled eucaine-B solution is drawn into a hand syringe; the catheter is pulled out so far that its eye still rests within the posterior urethra, and the solution is slowly injected. This will produce local anæsthesia of the parts to be operated upon.[2] The catheter is pushed back into the bladder and its outer end closed with a stopper. During the following five minutes—the time required to produce sufficient and proper local anæsthesia—the operator will do wisely to test once more the proper working of the incisor, which has meanwhile been taken apart and boiled. Bottini himself advises to test the heat of the knife on a piece of moist gauze or potato. I must confess that I no longer do this, but trust in the reliability of the instrument and the proper charging of the storage battery which I personally superintend. If the current turns the knife to white heat, I am satisfied. This generally occurs when the needle of the amperemeter in my battery points to 45-48. A properly instructed attendant takes charge of the battery and, later on, turns the rheostat till 48 or 50 is reached, according to the orders of the operator. The cable attachment is now pulled off the instrument, and a long and small rubber tube, previously boiled, is slipped over the two metal tubes which are attached to the handle of the incisor, for the purpose of supplying and carrying off the ice-water used to cool off the instrument when at work. Thus prepared, the incisor is placed on an aseptic towel.

---

[1] Langenbeck's Archiv., vol. liv., p. 118.

After the expiration of the five minutes allowed for the local anæsthetization, the eucaine solution is withdrawn, and 150 c.c of a sterilized boric-acid solution introduced. The catheter is pulled out. Then the patient's pelvis is placed on a hard pillow some twelve inches high, so that the upper part of his body is tilted slightly downward.

He spreads his legs, between which a pus basin is placed on a table. With a small sterile glass syringe the anterior urethra is now once more washed out with sterilized boric-acid solution and then filled with three-per-cent. eucaine solution. While the fingers of the left hand compress the urethra near the external meatus, those of the right hand gently massage for a while the urethra toward the bladder. By doing this a part of the eucaine solution is pressed into the posterior urethra. This still further insures complete local anæsthesia of the latter. After the remaining part of the solution has run out of the meatus, a syringeful of sterilized paraffin is slowly injected into the anterior urethra, the meatus being compressed. The nurse then hands the incisor to the surgeon for introduction into the bladder. In the majority of cases the handle must be deeply pressed down before the beak slips into the viscus. Cases in which the instrument cannot be introduced at all will be of rare occurrence, I think. In one only of my twenty-four cases did I find difficulty.

---

[2] For the last four weeks I am trying a one-per-cent. sterilized watery solution of chloretone, for producing the desired local anæsthesia, with quite satisfactory results so far.

but I succeeded in my third attempt.[1] As soon as the instrument has entered the bladder, it is turned around, and the glass nozzle of the fountain syringe which contains the ice-water is attached to the long rubber tube previously fastened to the handle; the short tube is made to enter the pus basin between the legs of the patient. Now the cable attachment is slipped over the upper end of the instrument, and the prostate well hooked with the beak of the incisor exactly in the median line. This is one of the most essential parts of the operation. At this stage the right forefinger (covered with a finger cot) of the operator should be pushed into the rectum in order to control the place of the tip of the beak within the bladder and properly gauge its distance from the anus. In patients with a very much enlarged gland, a short forefinger will never succeed in feeling the tip of the beak. For such instances it will be well to have an assistant at hand on whom nature has bestowed a forefinger long enough to enable him to reach up four inches and more above the anus, as I have found it necessary in two cases. Having measured the distance of the beak from the anus, the operator must make up his mind how long the incisions should be made in the given case. Now the rheostat is turned, so that the needle points to 45 amperes. The screw of the cable-attachment, which makes and breaks the current, is turned to the right and tightened. We wait about fifteen seconds—the time required for properly heating the knife. The real operation may now be started. I now generally make three cuts, one in the median line directly posteriorly and one through each lateral lobe. The posterior cut is, of course, the most important one. It is made first. As stated in my former paper, the incisions are made very slowly, by turning the outside screw as if the knife had to overcome a very great obstacle, with 45 amperes. For the return trip 49-50 amperes are turned on; this, too, is made at no greater speed than the first. The lateral cuts I make at an angle of 45° to 90°, and I must confess that I have no definite rules yet that guide me in determining the exact angle. So far I have based my decision in this respect on the previous cystoscopic examination and on rectal palpation; that is to say, the larger the lobe the more acute the angle. The anterior cut I have given up entirely since it caused me the loss of a patient (see below, Case XVII). While the incisions are being made the assistant now and then auscultates the suprapubic region to make sure of the sizzling noise produced by the cauterization. However, the odor of burnt flesh, escaping from the meatus, and especially the needle of the amperemeter give us assurance that the work is being properly done. The operation performed this way takes me generally about ten minutes, counting from the moment the current has been turned on until the third incision through the gland has been finished. During this time I never turn off the current, but only reduce its strength to 45 amperes after each return trip of the platinum knife. The three cuts having been properly made, the current is turned off and the cable detached from the instrument; the latter is turned 180° and slowly withdrawn. During this procedure I continue to let the current of ice-water pass through the instrument. A reintroduction of the catheter for final irrigation I deem unnecessary. The patient, after being cleansed, is brought to bed.

---

[1] Freudenberg had an interesting experience in this respect in a patient sixty-seven years of age, who had had complete retention for the last two years. He was absolutely unable to enter the bladder with any stiff instrument; cystoscope, stone searcher, sounds, as well as Bottini's incisor, were all unsuccessfully tried. The operation had to be abandoned for that day. On the following days sounds of increasing size could be introduced; three days after the first attempt the introduction of the incisor succeeded, though with some difficulty. Bottini's operation was done, and the patient was cured.

IV. After-Treatment.—In my former cases I generally insisted upon the patient's attempting to pass some water immediately after the operation, but found that very few only were able to discharge a few drops under pain, and I therefore no longer make this request; although I am sure that in a number of cases the occasionally following urethral fever would be avoided if the patients could, immediately after operation, clean the urethra with part of the fluid retained in their bladder. I have also given up attempts at introducing the catheter into the bladder as a routine practice directly after the operation, with the view of leaving it in place, except in cases with a very pronounced vesical catarrh, and in which catheterization had always been difficult. I now prefer to await further developments, but must confess that I am always relieved to learn that the patient has begun to void urine voluntarily within the first hours after operation. If, on the other hand, retention sets in, the reactive swelling of the gland in advanced cases may be so tremendous as to tax to the utmost our capability of emptying the viscus (see below, Case XX). If the patient begins voluntarily to urinate, the after-treatment is comparatively simple. "Hands off" is the watchword as far as instrumental interference is concerned. The probably following painful spasms at the neck of the bladder are overcome by morphine and suppositories of opium and belladonna. Salol, urotropin, and strychnine (as stated in my former article) constitute the drugs used for internal medication.

Some patients, while they are able to pass some water after the operation, are subject to such great and constantly recurring pain during and after each act of micturition, day and night, that they are soon worn out. In such instances, whatever we may employ, anodynes, sitz-baths, or permanent catheter, is of no avail. With the withdrawal of the latter—even after six or seven days of continued drainage—the pain reappears, and early repetition of the operation is the only alternative left to these sufferers. This brings relief, as I have observed in two instances (see Cases VII and XX). In cases in which absolute retention follows, and the introduction of the catheter is not difficult, I should prefer the use of the latter at regular intervals of six to eight hours, rather than to leave it in place permanently. The latter, no doubt, produces funiculitis and epididymitis oftener and more easily than frequent catheterization.

In instances in which a chill sets in, the surgeon must be careful to interpret its cause correctly. The chill may simply mean urethral fever of a few hours' duration; it may mean the beginning of a prolonged feverish attack, or of a more profound sepsis or pyæmia; or it may be the first warning of a perforation of the urethra from within with the galvano-caustic knife. Careful local and general examination will soon enable us to make a distinct differential diagnosis. The first three occurrences would have to be treated on general principles. Perforation of the urethra is promptly attended to by a perineal incision under eucaine, followed by drainage. If perforation has occurred, one can rest assured that the posterior incision has been efficient (!).

Inflammation of the cavum Retzii will not happen if we omit the anterior incision.

The length of time that I keep patients under my immediate supervision averages three weeks. While this may seem, and is, longer than necessary in some instances, it is not safe to let patients go any earlier, for the reason that hemorrhages may set in as late as twelve to twenty days after operation, the time when the eschars are cast off from the gland. If patients walk around, these hemorrhages may become more serious. They are generally easily controlled by rest, if more severe by the permanent catheter. In a few instances they have required suprapubic cystotomy and packing with gauze in the hands of others.

In favorable cases the quantity of urine discharged at each micturition will with lessening frequency gradually and continually increase until the normal amount is reached, in say two or three weeks, sometimes earlier.

I should now like to discuss a few important questions in connection with the operation, regarding a number of which differences of opinion still exist.

Should Cystoscopy Invariably Precede Bottini's Operation?—There can be no doubt that cystoscopy is of utmost importance, not only in establishing the diagnosis of prostatic hypertrophy, but also in determining the configuration of the gland. In cases in which the enlarged prostate is not palpable per rectum—and, according to Albarran and Motz, this is so in almost twenty-eight per cent. of all the cases—the cystoscope alone can establish the exact diagnosis. We see the pathognomonic groove at the internal urethal fold; on turning the prism posteriorly down to the fundus, we see the body of the gland often bulging into the bladder; on turning it to the sides, we recognize distinctly the enlarged lateral lobes, though not in full illumination. We are, furthermore, enabled to determine the absence or presence of a median lobe. And even if all these symptoms should, in exceptional cases, be but imperfectly developed, the finding of a trabecular bladder in the absence of a urethral stricture would still settle the diagnosis beyond dispute. Then, too, the cystoscope enables us to diagnosticate the presence of a vesical calculus which had not been suspected before, on account of its symptoms having been masked by those of the prostatic enlargement. Only very recently did I thus detect a stone in the bladder of a patient who had not had one of the clinical symptoms generally attributed to vesical stone.

Yet, notwithstanding the great benefit that may be derived from cystoscopy in obscure cases, it may become harmful in some instances, as for example in prostatics with chronic sepsis. Here cystoscopy, the same as any other intravesical instrumentation, may be followed by serious urethral fever. One should therefore well weigh the pros and cons in deciding whether this most desirable visual inspection should be added. I have grown particularly careful in this respect since I lost a case a few months ago as an indirect result of cystoscopy. The patient, a man of seventy-six years, who had been sent to me for Bottini's operation, was suffering with chronic cystitis and pyelo-nephritis. Cystoscopy was performed by me and followed by a protracted urethral fever to which he finally succumbed. I insisted upon the examination only because all symptoms pointed to the presence of a stone, so that it was necessary, under all circumstances, to resort to intravesical instrumentation of some kind in order to ascertain the correct diagnosis. The cystoscope proved the suspicion to be unfounded.

To sum up, I would therefore say: cystoscopy should precede Bottini's operation, provided there be no contraindication to its performance. What deserves to be especially emphasized, however, is, that in cases of doubt, *i. e.*, when the symptoms are misleading, and when all other means at our disposal for rendering the diagnosis could not be relied upon with absolute certainty, it is the cystoscope alone that can definitely clear up all doubt and enable us to establish the correct diagnosis even at an early stage of the disease.

Filling of the Bladder.—Shall we do the operation with the bladder empty, as Bottini at one time proposed, or shall we fill it with a fluid, or with air, or with carbonic acid gas?

1. Operation with the Bladder Empty: This procedure should be, and I think has been, dropped altogether. It is well known that by filling the bladder, at least to some extent, entrance to the same in prostatics per vias naturales is greatly facilitated. In the distended viscus the projecting hypertrophied rugæ of the detrusor muscle furthermore are smoothed out, and not so apt to be hooked by the tip of the incisor when gliding over the fundus of the bladder in order to hug the prostate. It was when doing the operation in this way that Freudenberg cut through a transversely running fold of the fundus of the bladder and lost his patient from acute sepsis.

2. Operation with the Bladder Filled with Sterilized Boric-acid Water: This is the procedure which, as stated above, I personally am still adhering to in my Bottini operations. What others claim to have experienced in their patients does not seem to me proven, viz., that the heating of the fluid immediately surrounding the galvano-caustic knife produces the scalding sensation. If the prostate is thoroughly hugged with the beak of the incisor, the knife must at once enter the prostatic tissue, and surely is surrounded by so very small an amount of fluid that I cannot understand how just the heating of this bit of fluid could be the principal source of the sometimes rather great pain to the patients. On questioning the latter regarding this point, I almost invariably received the answer that they did not mind the burning part of the operation, but that the pain produced by the compression of the prostate by far overshadowed all other sensations.

3. Operation with the Bladder Filled with Air: I personally should have no hesitancy about doing the operation with the bladder filled with air were it not for the unfavorable results of the experiments made by Lewin and Goldschmidt, already referred to in my former articles.[1] I there stated that these two investigators had found that, under certain conditions, unknown to us, air may pass upward through the ureter into the pelvis of the kidney, and from there, by way of the branches of the renal vein, enter the inferior vena cava and the heart. Instant death is the result. I am aware of the fact that Dr. Bransford Lewis, of St. Louis, Mo., in his experiments,[2] has obtained results entirely at variance with the findings of the German investigators, and it was this report that impelled me to write direct to Professor Lewin, at Berlin, with a view to eliciting from him some data that might perhaps explain the apparent difference in their conclusions. Dr. Lewin, under date of June 29, 1899, sent me a most interesting answer, from which, with the author's permission, I quote as follows:

"The phenomenon of air ascending into the renal vein, etc., as well as the antiperistaltic transmission of liquid from the bladder into the pelvis of the kidney, does not occur in every animal. I have opened the abdomen of about two hundred animals in all, but have not succeeded in determining the conditions under which the experiment gives a positive result.

"I can say, however, almost with absolute certainty, that a constant pressure of air within the bladder, filling this viscus nearly to bursting, never produced the phenomenon in question. Whenever it appeared, it did so immediately after the injection of air, even when the bladder had been filled to a small extent only. It occurs, as it were, during the first moments when the air enters the bladder, sometimes also while injected air is allowed to escape again through the catheter; eventually, also, immediately after the second or third injection. Death is the absolutely certain consequence of the entrance of air into the venous system in this manner.

"I shall take opportunity, within the very near future, to demonstrate the aforesaid to Dr. Freudenberg" [who had then just stated, in a letter addressed to Dr. Lewis,[3] that he now also prefers to do his Bottini operations with air injection into the bladder, and who also, according to Professor Lewin, had interpellated him regarding the latter's entirely different findings from those of Lewis] "that he may learn from the same, what such experiments must teach, viz., the possibility of the occurrence of the phenomenon in question also in the human subject. More than that can, of course, not be claimed. The same conditions are extant here as obtain in the case of other dangerous operations. Hundreds of patients are unscientifically narcotized, the quality, the concentration, and dosis of the narcotic may not come up to the standard, yet, thanks to unknown circumstances, the patients do not die. But, in view of such occurrences, the conscientious physician will be mindful of the possibility of a fatal result."

---

[1] *Cf.* Author: *Loc. cit.*, *Medical Record*, 1898, vol. liii., p. 332; and 1899, vol. lv., p. 41.

[2] *Medical Record*, 1899, vol. lv., p. 425.

[3] *Medical Record*, 1899, vol. lvi., p. 34.

With a view of obtaining personally further light on this important question, I have carefully studied the various original and other treatises of Professor Lewin regarding this subject.[4] The doctor's researches prove that the possibility of air entering the venous system by way of the renal vein does exist.

In the face of these positive statements of Dr. Lewin, I believe I shall never agree to do Bottini's operation with the bladder filled with air. If sudden death should set in as a result of such filling, the conscientious doctor would have to confess that the lamentable outcome might have been avoided.

4. Operation with the Bladder Filled with Carbonic Acid Gas or Oxygen: As just stated, some colleagues claim that the operation is less painful and, perhaps, also more effective when done with the bladder filled with a gaseous instead of a fluid medium. It was on the strength of these assertions and of the unknown amount of risk attached to ballooning the bladder with air, that, upon the suggestion of Dr. A. Rose, of this city, I experimented with carbonic acid gas filling the viscus. The blood is, of course, capable of absorbing large quantities of carbonic acid gas as well as of oxygen. The small flasks filled with liquefied carbonic acid gas, make the ballooning of the bladder with this gas a very simple procedure. I have not yet done a Bottini operation with the bladder inflated in this way. The question which has first to be solved is the amount of expansion of the gas caused by the presence of the red- or white-hot platinum knife. This question does, of course, not concern us, if we would work with oxygen. However, the chemical production of this gas in smaller quantities, instead of making use of the large tanks sold in cities by every druggist, is less handy than the use of carbonic acid gas in the manner just mentioned; oxygen also does not possess that slight anæsthetizing property which various authors have claimed for carbonic acid gas. I shall not fail to report on the further evolution of this interesting question in the near future.

Length of Incisions.—The question as to the length of the incisions to be made through the gland undoubtedly constitutes the most important and, at the same time, the most difficult point in the technique of Bottini's operation.

a. In cases of fibrous prostates the length of the urethra measured from the external meatus to the internal sphincter muscle, that is to say, up to the spot where the water of a filled bladder begins to flow through a catheter which had been introduced, may serve as a reliable guide in estimating the proper length of the incisions to be made. Such a prostate can be but very little compressed. If we have found the length of the urethra, for instance, to be 29 cm., the incision may with propriety be made 8 cm. long, because we know that the normal urethra is on the average 21 cm. long. In other words, we make the incision correspond to the difference in length between the normal urethra and that in the given case.

---

[4] "Experimental Studies on the Relation between Bladder and Ureter," by Drs. L. Lewin and H. Goldschmidt. *Berlin klin. Wochenschrift*, No. 32; paper read before the Berlin Med. Soc., July 12, 1893.—"Experiments on the Relation between Bladder, Ureter, and Renal Pelvis," by Drs. L. Lewin and H. Goldschmidt. *Arch. f. pathologische Anatomie und Physiologie und klinische Medicin*, vol. CXXXIV, i., Berlin, 1896.—"Absorption of Foreign Substances from the Bladder," published in the *Arch. f. experimentelle Pathologie und Pharmacologie*, vol. XXXVII, 1896, by Professor Lewin.—"The Passage of Hard Substances from the Bladder into the Kidneys and Remote Organs of the Human System," also "The Entrance of Air from the Bladder into the Heart and the Path it Follows," by L. Lewin, with microscopical contributions by Dr. Lommen. *Arch. f. experimentelle Pathologie und Pharmacologie*, vol. XL, 1897.

It will be wise to control and possibly modify this decision reached before the operation according to the result of rectal examination after the prostate has been well hooked during the operation.

A useful clew in regard to the required length of the incision is furnished by rectal palpation, performed in the following manner: If an assistant (the proper length not only of whose forefinger, but also of each phalanx of the same, has been previously ascertained) inserts his finger into the rectum as soon as the prostate has been firmly hooked, and gropes for the tip of the instrument at the upper end of the gland, he can determine the exact distance of this tip from the anal ring. If he then again introduces his finger, measuring the distance of the lower end of the prostate from the sphincter muscle, and deducts the latter measurement from the former, we know the palpable length of the prostate per rectum. The length, thus found, can then be compared with the abnormal length of the urethra, previously ascertained. If, however, we now make the length of the incision exactly correspond to such rectal diameter of the prostate, we may find quite often that the incision has not been sufficiently long. I have noticed this in a number of instances, and have come to the conclusion that it will be best to make the incision about 1 to 1.25 cm. longer than the longitudinal diameter of the prostate found per rectum. That is to say, if the tip of the beak was 8 cm. distant from the sphincter muscle and the lower end of gland 4 cm. in diameter, we should not make the incision 4 cm., but 5 to 5.25 cm. long.

b. All these points are entirely different, however, in the other far more frequent class of prostatic enlargement, namely, that in which the *glandular elements preponderate,* and in which, consequently, the organ can be compressed. Here the simple means of measuring the length of the urethra is of little avail, for it is obvious that the length of the urethra found before operation will be entirely different after the beak of the incisor has hugged the compressible gland. This shows clearly that in this class of cases the length of the cut to be made cannot be determined beforehand, unless we should, as a preliminary measure, ascertain to what extent the prostate may be compressed. Such a procedure, however, generally is inadvisable, inasmuch as it might be followed by very serious symptoms, so much so that Bottini's operation, the one interference that is likely to bring relief to the patient, might be rendered impossible. This question, how long must and dare we cut in the given case, must therefore, in the majority of our Bottini operations, be reached during the operative work. Some of the unforeseen occurrences that may then baffle the operator are, that a large median lobe may be turned back and thus increase the length of the urethra by almost an inch; or it may happen that the gland, which appeared quite large on rectal palpation, is so much compressed by the hugging beak that its diameter shrinks to almost nil, and the surgeon will ask himself whether his diagnosis, clearly established by all the exact clinical methods at his disposal, was correct, and whether there ever was an enlarged prostate.

That the occurrences here mentioned may often put the operator into a most annoying position, will be readily admitted. For if, in the case of a fibrous prostate with lengthened urethra, he should exhaust the full length which the ordinary incisor permits of cutting, namely, 4 cm., the incision may easily be too short and never properly divide the obstruction down into the prostatic urethra; an experience which I have had in a few cases. Or if in a soft, compressible gland he should make an incision of only 2.5 to 3 cm. in length, he may at once do a real internal posterior urethrotomy and perforate the urethra, an accident that happened to me in two instances. When operating on a patient with a very large prostate, and correspondingly lengthened urethra, I therefore now always make use of an instrument which allows of making incisions as long as 8 cm. This I have had made specially for such cases, in February, 1889.

I should strongly advise to make use of the incisor that permits of the long cut, (1) whenever the prostatic enlargement is very pronounced, so that the upper border of the gland cannot be reached on palpation per rectum, and particularly if the organ be of the fibrous variety; (2) whenever there is a median lobe of some size present; (3) whenever the length of the urethra has been found to be materially beyond normal.

In patients with a very soft and compressible prostate, on the other hand, I now make incisions not longer than 1 to 2 cm. I do not, however, in such cases omit to explain to the patient or his relatives why I had to make short cuts; that, in case of partial relief only being obtained by the operation, a possible repetition might become necessary, and that this would surely be preferable to perforating the urethra in our endeavors to overcome the obstruction by a single operation.

Number and Direction of Incisions.—As a rule three incisions should be made at every operation. Of these, as I have repeatedly stated in the course of this paper, the posterior one is the most important, since upon it principally depends the success of the operation. If properly carried out it must and should lower the prostatic urethra to the fundus of the bladder. In very much enlarged glands, and especially in the fibrous variety, I shall in future make it a point, when doing the posterior incision, to have the knife plough through the same groove twice in succession. Such a procedure is not likely to be followed by complications; at the same time it is sure to enhance the probabilities of obtaining the desired result.

The question of definitely determining the proper angle at which the lateral lobes had best be divided has not yet been solved. Practical experience has shown, however, that it is not of very great importance.

As stated before, I am guided by rectal palpation and cystoscopic examination, that is to say, if these show considerable difference to exist between the size of the lobes, I cut through the larger lobe at a smaller angle than through the other, in order to obliterate more thoroughly the communicating blood-vessels. For it is evident that the closer together the cuts, the more effective will be the destruction and obliteration; in other words, local atrophy must be the result of such close division.

The anterior incision I have found to be of real danger. It should therefore be dropped; or at least made only in cases in which the result after the first and second operation is incomplete, and in which cystoscopy plainly shows the mechanical cause to be situated in the anterior aspect of the internal urethral fold. Freudenberg has recently published a very striking illustration of this condition.[1]

Depth of Incisions.—In order to insure the proper depth of the incisions the following three factors should be carefully observed: *(a)* Position of the instrument during the operation; (*b*) the height of the knife and the proper heating of the same; *(c)* due slowness in making the incisions.

a. To bring the instrument into proper position for making the posterior incision, the outside handle has to be raised to such a point that one can feel the tip of the beak glide over the fundus of the bladder. In this position the prostate should be firmly hooked, after which the position of the instrument should not be changed again. Of course, care must be taken not to raise the handle too much, as by doing this the tip of the beak will be pressed down too far, and damage might result to the posterior wall of the bladder.

b. Freudenberg[2] considers 1.2 cm. (7-16 inch) the best average height of the knife. He has knives the height of which vary between 0.8 and 1.5 cm. (4-16 to 9-16 inch) and bases his selection of the proper one on the cystoscopic examination and rectal palpation of the tip of the incisor, which had been put in position and turned posteriorly. Although this may perhaps be useful in some instances, I fear it complicates matters unnecessarily, and am, therefore, in favor of trying to operate with one and the same size of knife in every instance. Moreover, the knife when brought to white heat and drawn very deliberately over the field—if needs be, twice in succession—will produce such a far-reaching eschar that a difference in height of 3 mm. can be of no appreciable account, as Freudenberg himself also admits. It is, of course, of greatest importance that the knife be brought to white heat in its entire length, a point to which particular attention should be paid when testing the instrument as to its proper working. The height of the knife of the American instruments averages 1.2-1.5 cm.

Complications that Have So Far Been Observed to Arise During Operation.—Complications that may arise during operation are:

---

[1] "Neue Mittheilungen zur Galvanokaustischen Radikal-Behandlung der Prostathypertrophie per vias naturales (Bottinische Operation)." *Deutsche Medizinal-Zeitung*, 19 0, Nos. 1–6.

[2] *Loc. cit.*

1. Perforation of the Bladder: This may occur by hooking a transverse fold of the vesical wall with the tip of the beak of the instrument and perforating it by drawing through it the galvano-caustic knife when hugging the prostate. Filling the bladder with a liquid or gaseous medium will, I believe, avert this danger in every instance.

2. Perforation of the Urethra with the Electric Knife: This is a consequence of the incision having been made too long, an occurrence which, I fear, cannot be easily guarded against, if the work is to be done thoroughly, so as to avoid the necessity of a second interference. The complication, however, comes into question only in case of extremely soft prostates that are more compressible than the operator anticipated or could have imagined. I believe that in these instances the incision should not exceed two centimetres in length, and it will be well, as mentioned before, to prepare the patient or his relatives after the operation for the possibility of a repetition of it, in case the work just done should prove unsatisfactory or entirely unsuccessful. As much as I am in favor, in every other instance, of trying to get through with one operation, I believe that in these cases treatment in two or more sittings is to be preferred.

Other complications which might arise as a consequence of the instrumetarium as such, can, I am convinced, always be avoided. The accidents in question are bending of the knife, and giving out of the battery. Bending of the knife will result from *(a)* overheating; *(b)* not steadying the instrument properly during operation; *(c)* an accidental movement on the part of the patient; *(d)* an assistant's finger pressing the prostate against the instrument.

By using the instrument manufactured here and keeping within the limits of 45-50 amperes, it seems to me that point *a* can always be avoided.

b. The surgeon should steady his instrument thoroughly during the operation, which rarely takes longer than ten minutes. The continuous cooling of the handle with ice-water may sometimes render a firm hold almost impossible, and it will be well, therefore, to slip a sterilized, thick knitted glove over the left hand.

c. A sensible patient, if warned beforehand that a move on his part may have annoying consequences, will rarely disregard such warning. I have never met with any trouble from this cause.

d. The finger of an assistant should never rest on the prostate during the operation; I consider this a fundamental mistake.

Complications That Have So Far Been Observed Occasionally to Occur Sooner or Later After Operation.—1. Urethral Fever: Unfortunately, it is not in our power, in spite of most scrupulous asepsis in every particular before and during operation, always to avoid the occurrence of this complication, which is to-day looked upon as a more or less serious form of septic infection. It is evidently caused by the absorption of micro-organisms or their toxins through a superficial or deeper wound of the posterior urethra. It will be found to set in sometimes on the first, more often on the second, rarely on the third day after the operation. As is well known, in patients who are inclined that way, the simple introduction of a catheter may suffice to produce it. It is all the more likely, therefore, to occur after the use of steel instruments and prolonged intra-urethral and intravesical manipulations. In favorable cases pulse and temperature will suddenly rise after a pronounced chill and then drop again within twelve to sixteen hours, without materially affecting the general condition of the patient. This I have seen only the other day in a neurasthenic subject, twenty-three years of age, who had been suffering for years from gonorrhœic prostatitis, but whose urine had been absolutely clear for the last month, at least macroscopically, although it evidently still contained bacteria. I used Bottini's cauterizator on him, after which he developed a chill at 3 o'clock in the afternoon of the second day after the operation; but his pulse and temperature dropped to normal again the next morning, after profuse perspiration. In less favorable cases the chill may recur on one of the following days, or there may be no chill at all, and only rise of temperature, after which the normal is reached again only after a disinct lysis in the course of a few days. In these instances the general condition of the patient is usually not particularly alarming.

In malignant cases the normal condition is not reached so soon; fever will continue and then become a symptom of true sepsis or pyæmia. It is to be hoped, as Freudenberg[1] mentions, that bacteriology will here come to the surgeon's help. It cannot be doubted that one or more kinds of certain micro-organisms are responsible for the disturbance. If they could be found, we might hope to prevent the occurrence of urethral fever and its sequelæ by previously administering hypodermic injections on the basis of serotherapy.

As mentioned above, Nitze has found, in connection with his intravesical work with the help of the operating cystoscope, that gr. xv (1 gm.) of quinine administered on the night preceding the operation exerts a distinctly prophylactic influence. Freudenberg advocates the use of methyl blue in conjunction with quinine. He prescribes gr. viii (0.5 gm.) of quinine with gr. ii-iii (0.1 to 0.2 gm.) of methyl blue to be taken three times daily for two or more days prior to operation, and to be continued for a few days afterward. This certainly seems a very useful addition, in that, as we all know, methyl blue has a most powerful antiseptic influence upon the uropoietic system. Even if it should not be an absolutely reliable preventive, I believe that it would, nevertheless, be advisable always to make use of the drug.

If the fever once has occurred, it will have to be combated on general principles. The internal regular administration of urotropin, salol and quinine, also small doses of phenacetin, alcohol, strychnine, caffeine, etc., hypodermically and by mouth, for stimulating the heart's action, and the ingestion of large quantities of liquids, has given me the best results.

---

[1] *Loc. cit.*

The more serious class of urethral fever is:

2. True Sepsis: This complication generally results fatally in older patients, especially if they have been suffering from similar attacks in former years, also from pyelonephritis. As stated in my former article, there are chronic septics among the prostatics, and in these the least cause may suffice to bring on the catastrophe. It would be gratifying indeed if this complication could in time be avoided by the application of proper sero-therapy.

3. Pyæmia has been observed by Freudenberg. In my Case XXII I had the peculiar experience that varicose veins on the left leg and thigh became inflamed on the third day after the operation, the immediate result having been simply ideal. This patient had passed through a tedious treatment at the hands of his family physician for a cellulitis of the hand, which, at the time of the operation, had been almost overcome. Whether multiple minute abscesses were present in his extremely soft prostatic gland, I am unable to say. I believe, however, that streptococci still circulated in his blood and produced an infected thrombus at a place where the blood-current was the slowest, *i. e.*, in the varicose veins. In a similar case I would certainly raise the lower end of the bed of the patient immediately after the operation, thus having him in a recumbent posture. As he died suddenly on the twelfth day after the operation, I believe that an embolus was thrown into his pulmonary artery or one of its branches. To my regret, an autopsy was not permitted.

4. Embolism into the lungs has been observed by Freudenberg, as proved by autopsy.

5. Absolute Retention: As I have already stated in my first article on Bottini's operation, every operator undertaking to treat his prostatic patients according to Bottini must be able to meet this complication in an absolutely aseptic manner. As will be seen further down, in Case XX, I could not enter the bladder for fully three days in any other way than by aspirating above the pubis every eight hours; thus the trocar had to be pushed into the bladder eight times. I found it very useful in this case first to penetrate transversely the thick adipose tissue with the knife under cocaine, by making an incision of about one-eighth of an inch, and then pushing the trocar through this wound into the bladder. In this way I avoided always re-entering the same tract with the trocar tube. On the fifth day at last I was able to introduce an olive-pointed Mercier with a double curve, No. 12 French, which, of course, was left in place.

6. Hemorrhage: This, if it occurs at all, is apt to set in at the time when the eschars are thrown off, that is to say, usually between the twelfth and the twentieth day, although I have in one instance seen a large piece come away as late as thirty-five days after the operation. However, I am inclined to think that here the eschar had dropped into the viscus some time previously, but had not been expelled before. On the whole I believe that, if the patient keeps quiet and the doctor abstains from washing the neck of the bladder during the first three weeks after

the operation (!) this complication will rarely be observed. The introduction and tying in of the permanent catheter will almost in every instance enable us to cope with the complication. Yet a number of cases have been reported in which only immediate suprapubic cystotomy, followed by tamponade, saved the patient's life.

7. Very Frequent and Painful Spasms at the Neck of the Bladder with Partial Retention: As repeatedly mentioned in the course of my article, this is a complication rather often met with, especially in cases of a large median lobe and too short an incision. If a large projecting median lobe has been turned back by the pressing down of the beak at the time of the operation and the cut is then, for instance, made only 4 cm. long, it will be readily understood that such an incision will end within the parenchyma of the prostate itself, instead of entering the prostatic urethra, as I believe is necessary for a satisfactory result. We then have to deal with a condition similar to that found when performing immediate suture of the suprapubic incision of the bladder after the removal of a vesical tumor, the base of which had been thoroughly burnt with Paquelin's thermocautery. Experience has taught me in such cases not to sew up the bladder, but to drain it. It will be seen thus, that by learning to give our incision the proper length we shall probably be able to avoid the occurrence of such painful and frequent desire to urinate. In case it does set in, large doses of morphine with suppositories of opium and belladonna, extr. hyoscyami in two-grain pills at regular intervals of four to six hours, may be found valuable. If the catheter enters without great difficulty, it ought to be introduced every six or eight hours according to necessity. If the desire to empty the viscus should be too frequent, the catheter must be left *in situ*. In that case, provided there is no chronic pyelitis present, which so often causes fever, we have to watch the temperature carefully; for a rise, as I have seen, may be the precursor of a funiculitis with abscess formation of the same or of the testicle. The catheter should be removed just as soon as a rise of temperature occurs. If the patient does not begin to urinate voluntarily within a reasonable time after the operation, the latter will have to be repeated.

PITHY, PUNGENT AND POINTED PARAGRAPHS,

REPRINTED FOR THE PERUSAL OF PHYSICIANS WHOSE
PARTICULAR PENCHANT IS PERTINENT PROSE.

THE TREATMENT OF SCABIES.

Sherwell (*Journal of Cutaneous and Genito-Urinary Diseases*, November, 1899) states that for twenty-five of the now nearly thirty years of his active dermatological practice he has used the method of treatment which he describes, and that many of his colleagues and most of his students do the same. This treatment consists in the use of the washed flowers of sulphur, and is the cleanest, least disagreeable, and altogether the most efficient method at our command. The patient is directed to take a bath; using a little sand soap over the tougher portions, except in the case of infants. The body and limbs are rubbed lightly with a little of the sulphur powder. A half teaspoonful is more than enough for each individual. The bed-linen and underclothing of all kinds are changed, and between the sheets or the coverings that come next the person in bed a half-teaspoonful of sulphur is sprinkled. One of the sheets is lifted and a light blow given, which causes enough disturbance of the air to disseminate the powder over the whole internal surface. By repeating this application to the bed every other or every third night, by bathing, and changing clothes in about the same way and at about the same interval for a week, a cure is effected in ordinary cases.

The male acarus is not a burrower. At the time the female has proruptured into the external world from below the epiderm, the male is either dead or certainly functionless.

Few cases or case groups last over the ninth day under this treatment. —Exchange.

CLINICAL USES OF LIQUID AIR.

Pearce states that liquid air has been satisfactory as a local anæsthetic, minor operations being done with no pain at all, and no injury to surrounding tissues. In neuralgias and pain of herpes zoster it has given prompt relief. It was used in a case of erythematous lupus without producing the deep searing attending other forms of treatment. A case of epithelioma of the face yielded easily. In cases of small tumors of the face, nævi, etc., it can be used, and leaves a scar which is hardly perceptible. Cases of boils, carbuncles, and buboes showed marked modification in their course. A case of facial erysipelas was subjected to the spray until the infected surface felt very cold, and when the patient returned three days later, having had no other treatment, the inflammation had subsided completely. Sluggish ulcers seem to take on a new growth when they have been subjected to a spray of liquid air, which appears to have all the effects of a caustic without its attendant inflammation.

CHRONIC ECZEMA.

A confrère asserts that he obtains the radical cure of eczema where it occurs in isolated patches on the upper extremities and so rebellious to the ordinary method of treatment, as follows: After having washed thoroughly with soap and water the part and dried it, he rubs in vigorously a 50-per-cent. solution of caustic potash by means of a plug of cotton tied to a rod; he then washes the spot freely with water, and, finally, paints it over with a 50-per-cent. solution of nitrate of silver, and envelops the whole in aseptic cotton. This dressing is left in place until the cicatrix is formed beneath the slough, or from one to two weeks. The itching ceases immediately after the application of the caustics. Out of thirty cases thus treated, only one required the operation a second time.—*Med. Press and Circular.*

A RADICAL OPERATION FOR THE CURE OF HERNIA IN INFANTS.

Karewski (*Centralblatt fur Chirurgie*, No. 51, 1899) coincides with Fraenkel in believing that the majority of hernias in infants should be treated by radical operation, but differs from him as to the operative technique, believing that it is only necessary to thoroughly free the hernial sac, ligate it, and close the parietal wound by a through-and-through suture to obtain a prompt and lasting cure. He does not insist upon all these cases being operated on, holding that when the truss is well borne and proves adequate, this should be employed. During the period of youth and adolescence very few cases are cured by trusses, and the great majority should be subjected to operation.—Exchange.

MODE OF ASCERTAINING IF TUBERCLE BACILLI ARE PRESENT IN FÆCES

Rosenblatt (in *Centralbl. f. uin. Med.*), states that when intestinal tuberculosis is suspected doses of opium should be administered until constipation rules. The hard scybalæ thus occasioned should then be scraped and the scrapings examined for the bacillus in the usual way, when, if present, they will be found in the first examination. The doctor explains this by saying that the bacilli congregated on or below the ulcers adhere to and are carried along by the hard masses of fæcal matter, whereas otherwise they are lost in the usual voluminous liquid stool of intestinal tubercular patients, and then are at the best very difficult to find.

HABITUAL CONSTIPATION.—In the habitual constipation of delicate persons with feeble digestive organs:

℞	Ext. cascara sagradæ	gr. 2.
	Ext. nucis vomicæ	gr. ¼
	Ext. belladonnæ	gr. ⅓
	Pulveris capsici	gr. ½.

M. One such tabloid after food once daily should be taken; increased, if necessary, until two tabloids are taken thrice daily. This dose should be maintained until the habit of regular action is established, when the number should be gradually reduced and at length discontinued. Remedy the lack of fluids in the body by giving an abundance of water, either hot or cold.—*Cutter, Ex.*

Vomiting of Pregnancy.—Dr. Barth (Norsk Mag. f. Laegevidensk.) gives full clinical details of two cases of uncontrollable vomiting of pregnancy in which it was found necessary to induce abortion to save the mother's life. In both cases there was the history of preceding miscarriages, and in both there was constriction at the internal os uteri as shown by the existence of a marked groove on the laminaria tent which was used to induce the abortion. There had been severe endometritis, and there was rigidity of the vaginal portion of the cervix. In one there was a well-marked erosion on the cervix, in the other the indication of the beginning of one. Morphine, bromide of ammonium, and oxalate of cerium had been tried, but with no good result, and the application of cocaine on iodoform gauze to the cervix thrice daily was also without effect. Barth believes that the vomiting is due to neurosis of the sympathetic system, and points out how densely the sympathetic fibers and ganglia surround the os uteri internum. There was marked ptyalism with viscid mucus, a circumstance which also pointed to the involvement of the sympathetic.

Malarial Hematuria.—B. Smith, in giving the history of malarial hematuria, shows that the disease is not peculiar to the southern part of the United States, that it is not a new disease, but that it was well known to the ancient physicians. Malarial toxemia of long standing seems, as a rule, to be essential to its appearance. That malarial poison is specific admits of little doubt; there is no other known agent capable of producing the same morbid phenomena. The anatomic changes are described, based upon autopsies. The blood is generally thin and watery; its serum is golden yellow, due to bile pigment, which imparts a yellow color to the different organs. The red blood corpuscles are greatly diminished in number, and are usually extremely pale, and some of them contain small pigment granules. Malarial hematuria does not manifest itself, as a rule, except in those who have been exposed to malarial influences for a long time. The attack is ushered in with a chill, or the first indication may be languor, faintness, pain in the back and limbs, headàche and nausea. These symptoms are soon followed by a sensation of chilliness, and finally the chill is fully developed. Vomiting sets in at this stage, and soon becomes severe and distressing. The average duration of the chill is about one hour, and then gradually gives way, the permanent feeling of warmth coming by degrees. The skin then becomes yellow, growing deeper as the disease progresses, and the color is uniform all over the body. The hematuria has come on in the cold stage, or very soon thereafter, in all the cases observed. The urine is of a muddy, brownish-red color, sometimes bright red, and often brown or greenish-black. Microscopic examination shows numerous cells from the kidneys, discolored by the coloring matter of the bile and blood. and large numbers of blood corpuscles, some unchanged, but most of them crenated and disintegrated. The reaction of the urine is acid. Death results from exhaustion, from total arrest of the renal functions, from sudden collapse, followed by prostration and coma.

Personal Infection in Typhoid Fever.—Dr. Jos. Priestley, the medical officer of health, has recently reported an exceptional increase in the number of cases of typhoid fever in the parish of Lambeth. He has traced the source and spread of three localized epidemics, and considers the facts noteworthy and interesting from an etiological point of view, as showing in all probability that typhoid fever spreads by actual contact oftener than is commonly supposed. The first case was in a woman where the disease was not recognized until it had run a few weeks of its course; largely owing to this circumstance the disease spread (1) to a child living in the same house; (2) to two children living in the opposite house, one of whom communicated the disease to a young man who shared the bed with him; and (3) to a woman, a friend of the first patient, who lived two doors away. The second group of cases commenced in a man who sickened with obscure symptoms which did not admit of diagnosis until some four weeks had elapsed. (1) A lodger in the same house became infected; (2) a sister living in a street close by; (3) a friend living in the same street; (4) another friend in the same street, whose daughter subsequently fell a victim, and (5) possibly two other persons living in the same street. The third group began in a man who probably died of the disease without its true nature being diagnosed. His clothes were sent to his mother-in-law to be washed, and she became infected (1); as did also his brother-in-law (2), his sister-in-law (3), and his wife (4), all of whom lived in the same house. A friend's child (5) living next door became infected through the sister-in-law, and a boy (6) living in the same street, and who was a schoolmate of the patient's brother-in-law, is thought to have contracted the infection from the latter. Careful inquiries failed to reveal any infection of the milk, water or shell-fish, and by a process of exclusion Dr. Priestley is inclined to regard the spread of the disease as due to direct contact from person to person or to indirect contact—through infected clothes, food, etc. In conclusion, Dr. Priestley pays a tribute to the value of the Widal test, whereby he was able to make a prompt diagnosis of the condition.—*The Brit. Med. Jour.*, January 6, 1900.

CONTENTS OF VOL. LXXI.

A

Page.

Appendix, Early vs. Late Operation in Cases of Inflamed, C. Mansell Moullin, F.R.C.S. 814-818
Antivivisection Bill Again..... 833
Apomorphine as a Hypnotic in Alcoholism 837
Asepsis, Points Regarding Perfection of, Carl Beck....... 848-855
Acidity, James F. Goodhart... 891-904
Anemia, George Gibson....... 934
Appendicitis, Reflections Upon, J. O'Connor, T.C.D....... 943
Abortion, Peculiar Case of, B. L. Taliaferro.......... 950
Appendicitis 954-956
Alcoholic Gastritis, J. A. Hofheimer 1022
Aseptic Catheterism, Carl Beck 1033-1035
Acute Lobar Pneumonia, James K. Crook.........1092-1098

B

Blaud's Pill, Use of the Iron of, 808-810
Baby's First Week, H. W. Cummings 881, 882
Book Reviews 908

C

Clinical Manifestation of a Physiological Fact, Wm. H. Robey, Jr.......... 827-829
Cannabis Indica in Excessive Menstruation 836
Christian Science 842
Consumption, Home Treatment of, William Osler.... 855-859
Craniectomy for Microcephalic Idiocy 887
Chloral Poisoning, Philip F. Rogers 1007
Childbirth with Savage and Civilized Women 1018
Carcinoma of the Breast, Wm. Francis Campbell 1043-1046
Creosote, its Use in Various Conditions, Frederick Cleveland Test 1073-1078
Carbon Dioxide Poisoning, W. Scott Thomson 1087, 1088
Cerebro-Spinal Fluid Discharged from the Nose, W. Freudenthal 1122-1128

Page.

Crushed Limb, Consecutive Examination of.......... 1132
Constipation, Habitual 1168

D

Dysmenorrhœa, Anna E. Park, 818-822
Diabetes Mellitus of Apparent Bacterial Origin, J. P. Sheridan 951-954
Diarrhea of Pulmonary Tuberculosis, Louis F. High.... 964-967
Do We See with Eyes or Brain, J. Waterloo Dinsdale....1099, 1100

E

Editorial:—
843, 844, 910, 911, 1041, 1042, 1107
Much Ado About Nothing.. 975, 976
Ear Complications in Scarlet Fever and Measles, Chas. H. May 911-918
Enzymes and Immunity, Chas. T. McClintock 1057-1061
Ethyl Chlorid in General Anesthesia, James P. Tuttle...1089-1091
Eye-Strain, Its Relation to Epilepsy, Insanity, etc., Thos. P. Satterwhite..........1139-1144
Eczema, Chronic 1168

F

Fracture and Traumatic Amputation, Thomas H. Manley 866-869
Floating Kidney Mistaken for Ovarian Tumor, H. T. Miller 1035
Forceps, Use of the, Denslow Lewis 1047-1049

G

Gestation, Protracted, John Phillips, L.R.C.P. 882-884
Gonorrhœa, Irrigation in Acute Primary, George M. Coon, 920-923
Gastritis, Chronic, J. H. Salisbury 982-989
Gangrene of the Tonsil, Alexander C. Howe..........1117-1119
Grip and Colds, Wm. S. Gordon 1144

H

Page.

Hiccough, Arrest of, by Depressing the Tongue...... 835
Hydrochloric Acid and Pepsin in Diseases of the Stomach, F. W. Froehling.......... 877-880
Hypnotics, the Most Effective, John Buxton Carr......... 962-964
Heredity, Joseph Sager......1019-1022
Haffkine's Anti-Plague Inoculation 1025-1031
Headache Treatment 1037
Hay Fever, Etiology and Treatment of, Edwin Hank 1119-1121
Hernia in Infants 1168

I

Inflammation as a Factor in Amputations, Thomas H. Manley 845-848
Inorganic Iron in Anæmia, G. Milton Linthicum.........998-1004
Iodoform, Unwarranted Use of 1038

L

Latent Gonorrhœa in the Male a Factor in Female Diseases, Lewis Wheat....... 977-981
Liquid Air, Clinical Uses of.. 1167

M

Maternal Inebriety, Influence of, on Offspring........... 829-830
Menstruation, Vicarious, from the Gums 831
Medical Men, Long Suffering of 832
Mercurial Injections, Poisoning by 834
Malaria and Mosquitos....... 890
Massage of the Abdomen in Deficient Lacteal Secretion 907
Manganese in the Treatment of Dysmenorrhœa 1008
Malarial Hematuria 1169

N

Nursing in the Lying-In Period, Gustave Kolischer, 864-866
Nomenclature, Indefiniteness of Our, H. A. Fairbairn.... 940-943
Nauheim Bath in Cardiac Disease, F. R. Henry........1055-1057

O

Page.

Operative Shock and Stimulants 934
Obstetric Operations, Indications for, C. A. Von Ramdohr 956-959
Ophthalmia Neonatorum, J. A. Day 1049-1054

P

Pain of Parturition, Physiological Character of, Samuel M. Brickner, A.M. 794-801
Pneumonia and Its Treatment, 802-804
Pyrexias, Treatment of, by Chemical Antipyretics, F. A. Long 804-807
Progress of Medicine in the 19th Century.............. 825-827
Prescribing Alcohol vs. Our Own Interests, Frederic C. Coley 870-872
Preserved Foods, Danger from Boric Acid in, Oscar Liebreich 872
Pediculi Capitis as a Cause of Enlarged Cervical Glands, Battle Malone 889
Pithy, Pungent and Pointed Paragraphs, 905, 906, 968-974, 1101 1167-1170
Pneumonia That Only Threatens, George Dunsmore.... 918-920
Parturition Among the Eskimos, C. C. Gleaves........ 935-938
Puerperal Eclampsia, E. M. Hutchens 1005-1007
Placenta Previa, Hugh Hendrixson 1112-1116
Prostatic Hypertrophy, Bottini's Operation for, Willy Meyer 1148-1166

Q

Quinine in Malarial Hemoglobinuria 836

R

Rectal Carcinoma, Excision of, without Sacral Resection, N. Senn, Ph.D. 787-793
Removal of Seven Uterine Fibroids 884
Relation of Migraine to Epilepsy 907
Rectal Diseases, Diagnosis of, Geo. J. Monroe........... 923-927
Responsibility of the Surgeon, 927, 928

Page.
Richmond Academy of Medicine and Surgery......... 1009
Rheumatism, Its Prophylaxis and Cardiac Complications, Sir Richard Douglas Powell 1061-1068
Respiratory Organs, Diseases of, H. Stuart McLean....1107-1111

S

Sex, Origin of................ 823-825
Surgical Needles, Preservation of 835
Sterilization of Catheters and Bougies 838
Sexual Impotence, Ernest Dwight Chipman 860-863
Septic Lymphangitis along the Ureters treated with Serum, J. W. Stenhouse..... 937-940
Suggestion for Tablet-Triturate Manufacturers, Charles J. Proben 948-950
Surgical Odds and Ends, Wm. Anderson Payne 995-998
Sterility and Pelvic Deforms, Joseph Brown Cooke..... 1016
Sterility in Women, R. E. Cutts 1069-1072
Syphilis, Charles J. Proben..1079-1086
Sea Sickness, J. B. Busdraghi.. 1129
Scabies, Treatment of......... 1167

T

Page.
Thyroid Gland and the Menopause, Chauncy Burr...... 810-814
Tact 831
Typhoid Fever, the Way to Employ Cold in, G. R. Johnson 928-930
Typhoid Fever at One Hospital During 78 years, Chas. E. Page 930-933
Tubercular Arthritis of the Knee, J. W. Henson.....1031, 1032
Thirty-two Cases of Typhoid Fever without a Death, J. C. Crist 1036
Tricuspid Regurgitation, W. C. Huntington 1133-1138
Tubercle Bacilli in Fæces..... 1168
Typhoid Fever, Personal Infection in................. 1170

U

Ununited Fractures, A. C. Bernays 959-962
Urticaria, David Walsh....... 990-995

V

Varicose Veins, Operative Treatment of 888
Vaginal Douche, Use and Abuse of, I. S. Stone....1129-1132
Vomiting in Pregnancy....... 1169

Want

COLLEGE OF PHYSICIANS LIBRARY JUL 14 1900

ontents, Pages 7 & 9. Advertisers' Index, Page 29

GAILLARD'S MEDICAL JOURNAL.

Scientia et Veritas Sine Timore.

tered as second-class matter at New York Post-Office

Published by the New York Medical Publishing Co.

EDITORS.

GEORGE TUCKER HARRISON, M.A., M.D. **CARTER S. COLE, M.D.**
E. GAILLARD MASON, M.D.

COLLABORATORS.

AILLARD THOMAS, M.D., New York.
ERBERT CLAIBORNE, Jr., M.D.
D. BRYSON DELAVAN, M.D., New York.
HUNTER McGUIRE, M.D., Richmond, Va.
P. BRYNBERG PORTER, A.M., M.D., New York.

LUME LXXIII. JULY, 1900. No. 1.

COLLEGE OF PHYSICIANS PHILADELPHIA APR 9 1901

ESKAYS Albumenized FOOD

has been

TRIED and PROVEN

by physicians to be the

IDEAL FOOD FOR INFANTS

and to agree with a larger proportion than any other artificial food.

THE FOLLOWING is one of many similar reports physicians are sending to us in every mail.

"My own baby, which was last summer but a little skeleton and on the very verge of death from malnutrition, was given ESKAY'S ALBUMENIZED FOOD and is now a bright, healthy and happy child, and is taking your food yet with a good relish."

Samples and Clinical Reports sent on application to
SMITH, KLINE & FRENCH CO., Manufacturers, Philadelphia, Pa.

ONE MICAJAH'S
MEDICATED UTERINE WAFER
Introduced into the vagina up to the uterus every second night, gives prompt relief in
PERSISTENT LEUCORRHEA
Flush thoroughly with hot water before inserting.

A VERDICT OF SEVENTEEN YEARS.

Micajah's Medicated Uterine Wafers Have long passed the experimental stage and enjoy the confidence of the best element in the Medical Profession, which unhesitatingly endorses them as a remedy which gives the most satisfactory results as a local application in cases of AMENORRHEA, as it stimulates the functional activity of the uterus, and in DYSMENORRHEA ENDOMETRITIS, SALPINGITIS, etc., reduces the inflammatory and congested condition of this organ and its adnexa

These wafers contract the tissues, muscular, elastic and connective. They contract the vessels, arteries, veins and lymphatics. They promote absorption of exudates and check secretions. They stimulate, add tone and are thoroughly antiseptic. They offer the most refined and simple method of making local applications in **DISEASES OF WOMEN.**

Samples and literature mailed free on application to MICAJAH & CO., Warren, Pa.

AMMONOL
THE STIMULANT · ANALGESIC · ANTIPYRETIC · ETHICAL

AMMONOL is one of the products of Coal-tar, and differs from the numerous similar products in that it contains Ammonia in active form. As a result of this ***AMMONOL*** possesses marked stimulating and expectorant properties. The well-known cardiac depression induced by other Antipyretics has frequently prohibited their use in otherwise suitable cases. The introduction of a similar drug, possessed of stimulating properties, ***is an event of much importance.*** ***AMMONOL*** possesses marked anti-neuralgic properties, and it is claimed to be especially useful in cases of dysmenorrhœa. – *The Medical Magazine, London.*

Ammonol may be obtained from All Leading Druggists.

Send for "AMMONOL EXCERPTA," an 81-page Pamphlet.

THE AMMONOL CHEMICAL CO., Manufacturing Chemists,
LABORATORY 366 AND 368 WEST 11th ST. 36 EAST 14th ST., NEW YORK, N. Y.
LONDON—PARIS—BERLIN—VIENNA—ST. PETERSBURG—PARKEWOOD.

GAILLARD'S MEDICAL JOURNAL.

VOL. LXXIII. NEW YORK, JULY, 1900. No. 1

BRIEF CLINICAL NOTES ON SERIES OF SURGICAL CASES TREATED DURING PAST YEAR.

By THOMAS H. MANLEY, M.D., New York.

The herein briefly recorded cases include a few of more than passing interest coming under my care during the past year.

Roughly grouping them, they are:

First—Cases of fracture, closed and open, of the skull, the humerus, radius, and of the femur.

Second—Traumatic and pathological conditions of the abdomen and its viscera.

Third—Tumors—simple and malignant—of breast, neck and other parts of periphery.

Fourth—Hernia, simple and complicated.

Fifth—Lesions of the anus and rectum.

Sixth—Gunshot wounds.

The subject of fracture treatment is ever one of greatest interest, because of serious traumatisms, and are the most common and especially of late, since aggressive surgery has endeavored to revolutionize the treatment of closed fractures; and it certainly has wrought wonders in the open and complicated varieties.

In closed fractures, there have been, of late years, practically no radical changes in their treatment. The most notable deviations in their management has been a delay in forcing reduction, a discontinuance of splinting in those with no displacements. An easy articulation and early active movement of the muscles and joints.

In open complicated fractures there has indeed been a radical, far-reaching advance in their management.

(a) No matter how badly a limb is shattered, if it possesses vitality it is not wholly destroyed, and no longer do we resort to a primary amputation of it.

(b) In serious open fractures we primarily depend on embalming the limb, quite regardless of any attempt at fixing the fragments.

(c) In the above class, the great aim is to first save the limb.

(d) After processes of repair are complete, when a deformity results with impediment in functions, secondary fracture is resorted to to fully correct and restore functions.

Case No. 1—Multiple fractures: Patient, 37, freight conductor, crushed by being thrown under a moving train of cars. Sustained a double fracture of left humerus, one in upper and one in lower third. A transverse fracture through upper third of radius and ulna and a dislocation upward and forward of the head of the radius. There were no serious internal injuries. Saw him six hours after admission, removed all splinters; arm terribly crushed, but the integument was unbroken. The parts deeply swollen and discolored; no radial pulse. The shattered limb was placed in an extended position on a pillow, well embalmed and surrounded by artificial heat.

The following day it was evident that the circulation was fully restored and acute inflammatory reaction had set in. Now, cool phenic acid solutions were applied. The patient suffered no severe pain at any time, general conditions remained good; same treatment continued, without any attempt at splinting for one week, then the arm was fixed at right angle and gypsum coat applied.

At the end of three weeks this was opened and limb examined, readjusted and later removed, when signs of all the fractures uniting were evident. The patient has never completely lost use of his elbow-joint; there is some stiffness of a finger and the rest of the limb.

It is my intention to perform a secondary osteoplasty on this defective limb, reset the head of the radius and deride the proximal ends of the shafts of the radius and ulna which work pressed together.

There are several cases of fdeformity following the complicated fractures which have been treated by osteoplasty by me during the past year with gratifying results:

Cases 1, 2, 3 and 4—Fractures of humerus, closed. Two women and two men, aged sixty, fifty-five and thirty-four and twenty-one. Fracture at junction of upper and middle third in all. The oldest patient was a woman whose arm I fractured while attempting to reduce a six months' old dislocation. Only supporting adjustments applied and no attempt at fixation. Never saw fragments unite more kindly or evenly.

Next case was in a man of 55: came near losing the arm during the second week. The bandage becoming loose, his wife reapplied it too tightly; six hours after, when I saw the arm, it was enormously bloated, dusky and cool, and these six hours came near costing him the loss of the limb. The other two cases presented nothing special. The only other worthy feature in all except the one endangered by strangulation was that in all the fragments came together regularly and solid, union was rapid. In the two younger ones within two weeks.

My experience in the treatment of fractures of the humerus has convinced me that the older view that "the bone united slowly, imperfectly or there was non-union of them, and that this depended on the difficulty of immobolizing the fragments" is a delusion. These cases will all do well if we entirely discard firm fixative splinting and depend rather on the course of extending weight of the forearm in a low sling and a loose supporting adjustment.

Retarded union comes from too tight splinting and too protracted inaction of the shoulder and elbow joints.

Cases 1 to 10—Eight in females over 50, two in men 47 and 56. The general characteristics of the typical Colles obtained in all. There is nothing special to note in them except that in four hospital cases a troublesome arthritis and rigidity of the joints followed with the characteristic deformity. I have found the X-rays of no use whatever as an aid in either diagnosis or treatment of these cases, nor have I subscribed with a view of Dr. John B. Roberts, who alleges that impaction must be broken up and the fragments forced into place and retained. In all these cases the structures, the tendons and blood vessels have suffered serious damage. To add the fresh danger of violence and to further impede the circulation by firm constriction strikes me as a perilous undertaking. In considering the amount only of the fracture, and thus give too much attention to the osseous element to the exclusion of the most serious complications of the soft parts.

Cases 1, 2, 3 and 4: Fractures of the femur—three in adults and one in child of six. These cases were all uncomplicated in fleshy old people; these fractures are very serious accidents in consequence of the confined recumbency required. Shortening in various degrees is the rule in adults.

When the antiseptic doctrine was first propounded it was hoped that to make a closed an open fracture and to solidly rivet the fragments would obviate shortening, but a few ventures and losses in death put a quietus on our anticipations in this direction.

Modern surgery has not advanced to the treatment of this fracture except that through the gypsum dressing we can get the patient out.

If in the early stages of this fracture, it is my belief that the old inclined plane will afford the most comfort and the best final results.

Of intra-capsular fractures of the femur, I have seen three during the past winter. These divided the greatest interest from the standpoint of diagnosis. One patient, a man of 45, was injured in attempting to mount a trolley car. On the day he was injured a surgeon of note saw the case with the family physician and pronounced it a sprain. Two weeks later I was called; a most critical examination was made, first in various postures, then he was placed on a strong table and fully etherized; now by flexion and abduction bony crepitations were distinctly made out. He was now placed in a plaster splint and the effect on his femur was most gratifying. The second case was an elderly lady on whom I was called to see in Ansonia, Conn. She was injured four weeks previously by a fall on an icy sidewalk; was confined to bed and was treated for a sprain by her medical attendant. Every movement in bed gave her great pain about the hip. Inversion of the foot was well marked, crepitations distinct under ether. After adjustment in plaster, was at once relieved. Rapid recovery.

Third case of intra-capsular fracture of the femur, patient female; seen with Dr. J. M. F. Edgar, in New York; 46 years old; was injured in dismounting from a street car. I saw her the day following, when eversion, impaction and shortening were well marked.

Many of the above type of fractures are exceedingly difficult of diagnosis immediately after injury, even though there be no impaction; muscular spasm is so great that at this time we cannot distinguish whether it is present or not, and, moreover, the parts are so hypersensitive that a proper searching examination is often impossible. When we are in doubt about these cases we will do well to delay for a day or two any forcible manipulation. If, for various reasons, a definite diagnosis be imperative at the primary examination, then the patient should be placed on a table, under narcosis, in order that accurate measurements be made and full muscular relaxation secured.

Cases 1 and 2, fractures of the vault of the skull. Two cases of skull fracture permitting of surgical treatment came under my care within the past twelve months.

Depressed fractures of the vault of the skull are the only type of fractures which admit of the making of a closed and open fracture.

In depressed cranical fractures of limited dimensions when the fragments are indented and compress the meninges, we should elevate them. In former times we placed a patient under an anæsthetic and trephine. Now, this operation is rendered much safer by the employment of cocaine, hypodermication by entirely discarding the trephine and elevating the fragments with a small asteotone and mallet. This simple procedure constitutes an enormous advance in the surgical treatment of these cases. Strong antiseptic solutions must be discarded here lest we provoke a fatal menigitis, as occurred in many such fractures some years ago. In this connection I might mention the great value of powdered mustard as an antiseptic to dust over the closed incision in scalp wounds, whether they involve the cranium or not.

DISLOCATIONS COMPLETE OR INCOMPLETE.—First of the shoulder, humerus, scapula. I have seen nine shoulder reducible and irreducible. Noted 5 in males and 4 in females; 7 were recent and readily reduced; 2 were old cases; one in a woman of advanced age; the other in a powerful young woman who said that the arm had been out of place since she was six years old. This case was remarkable because of the notable exception to the rule, inasmuch as the dislocated limb was more than three inches shorter than the sound one, while by most tests in all recent dislocations the limb is fully two inches or more longer than the sound one. The patient was advised against treatment, as with rotary movements she already had a fairly useful limb. She had neuralgia which readily responded to local remedies.

Second case. Compound or open dislocations at metatarso-phalangeal articulation of great toe. Reduction here was difficult, requiring a pre-division of the soft part, but not the tendons before reduction was possible. The patient was a young woman of 19 years, and made a prompt recovery without infection of the womb.

DISLOCATION OF THE DIGITS.—The phalanges of the thumb are more frequently dislocated than any other. Have seen three cases within a year. Like fracture of the thumb or finger, they are diagnosed with difficulty, and if one is inexperienced, they are very prone to be overlooked. If they are not promptly reduced they frequently give rise to very painful swelling. The vascular structures are strangled, and by loss of blood supply necrosis is very prone to follow non-reduction. If great resistance is encountered in reduction, a free incision is often necessary before the displaced bone can be fully restored.

GUN SHOT FRACTURES OF THE LOWER EXTREMITY.—Three cases of gun shot fractures came under my immediate care in Harlem Hospital during my last year's service, the patients all males, of whom one was a colored man, one an Italian, and one an American, a burglar. The Italian and colored man were shot while struggling with their adversary, in each instance the missiles passing downward and inward from without. Passing down through the outer condyle of the femur, penetrating and crossing the knee-joint, passing through the head of the tibia and lodging in the soft parts. In both of these cases after admission the knee-joints were widely opened, making an oval flap dividing the patellar tendon and ligaments. This permitted of the freest possible exploration with removal of bone fragment, fragments of clothing and particles of powder from the interior of the synovial membrane. In one, the colored man, the head of the tibia was shattered, the fiussures extending downward in a vertical direction. A number 38-caliber bullet was extracted in both instances. Provisions were made for free drainage, though no tubage was employed. In both cases repair was rapid. There was some suppuration in the Italian, though it only slightly retarded the healing. In both fairly good functions of the limb succeeded, much better than are commonly noted after a wire patella. The burglar was shot by a policeman at a distance of about ten yards, while attempting to escape arrest. The ball entered the leg from behind about a third way down from the articular of the tibula passing out forward on a line about an inch below the level of interest. The bullet made a clear passage through the shaft, however, at the same time, in some inexplicable manner inducing a transverse fracture. The wound of the entrance and exit were widely opened by free division of the tissues and the parts freely irrigated with sterile water. Now dressings were applied, over which was placed a plaster shell. On the fifth day a phenastram was made, and wound examined. There was no infection. On the tenth day he was brought to court and bail accepted. Then he went into other hands, and I heard no more of the case.

GUN SHOT FRACTURE OF THE LEFT MALAR.—Orbital plates and vomer, both optic nerves from through and sight destroyed. Patient on a Sunday afternoon early in the month of September last, while endeavoring to force an entrance into a liquor store was shot by the proprietor. He was a powerfully built police officer, 38 years old. He was shot while standing; the ball entered through the posterior border of the malar bone, its outer or orbital plate penetrating through the orbital cavity, the nasal partition, the inner orbital plate of the frontal bone, crushing through the optic nerve of the right eye, and lodging nearly flattened against the orbital plate of the right malar, behind the eyeball. Dr. George B. McAuliffe, the consulting ophthalmologist and otologist of the Harlem Hospital, was called. Patient had lost much blood and was in deep shock. Vision in both eyes was completely lost, and both globes protruded from their sockets. This was evidently dependent on large retroocular hemorrhage. Dr. McAuliffe removed the left eye and had general charge of the case until Dr. W. P. Dudley came on duty. Later the right eye was removed. The patient after a lengthy period made a good recovery.

CASES ONE, TWO, THREE, FOUR, FIVE, AND SIX.—Abdominal traumatisms and pathological conditions.

The first three were cases of traumatism in which laparotomy was performed. Some have been reported in Boston Medical and Surgical Journal, and Journal of Gynecology and Surgery in January, 1900. These cases all taught the important lesson that anything like definite diagnosis in many abdominal lesions is often attended with real difficulty, and moreover that in great traumatism it is generally better to delay abdominal section until shock is well recovered from.

CASES OF TUMOR BENIGN AND MALIGNANT.—The most common case of tumors we have to deal with are those which are histogically defined as benign, though quite a few of them present many clinical features of malignancy, i.e., they are attended with pain, seriously impress the system and are prone to early recurrence. This is especially true of various types of fibroids, the tubercular tubes and typhilatic growth. The modern treatment of all tumors contemplates their early and complete removal. It is my impression, however, that inasmuch as some tumors tend toward spontaneous disappearance or occasionally give rise to an inconvenience, haste is rather necessary in operations and it may be well to, as it were, study the growth a while before removing. The greater number of tumors coming under my care during the past year were those of a strumous character involving the lymph nodes of the triangles of the neck. In the surgical treatment of them, there is certainly no class of non-plastic, apparently so superficial, which are often attended with greater difficulty or danger in their removal. Some of them are so deeply located and are so intimately associated and adherent to the great blood vessels of the neck that their complete detachment may be at times quite impossible. Although it has been my good fortune never to have lost a patient from operation on these cases, still I have been painfully conscious of the peril attending operations on them. Once I located and lacerated the inter-angular vein near the base of the skull; in another opened the pleural cavity, in several cases, where the masses occupied the occipital triangula, the cervical plexus was engaged by adhesion, attention on these structures led to more or less paralysis of the arm on the affected side.

Cancer of the breast, to the number of sixteen cases, came under my care during the interval stated. One would be led to assume from what has been written during the past three years, that surgery can cure cancer, by large dissections of the mammary tissues and axillary spaces, but time is providing incontrovertible evidence that this is a fallacy. Very recently a case was shown after the wide dissection at the New York Academy of Medicine, in which, after three months, there was widespread recovery, but unfortunately in our profession fashion rules as in the outside world, and we are everlastingly chasing fads which only await the sanction of authority to give them currency If a thing only has claim of novelty it will go, whether it possess any real value or not. The simple excision may be followed by no return for years, it is comparatively free from danger to life, permits of a rapid recovery, and the function of the arm will not be impaired. One of my patients, a maiden of 50, did not spend a single day in bed all the time, performing the usual household duties, the wound uniting soundly in eight days.

CASES OF HERNIA, SIMPLE AND STRANGULATED.—Twenty-six cases of simple heria, and three cases of strangulated hernia, came under my care in 1899. About 50 per cent. of the simple ruptures coming under my care were not appropriate of surgical treatment; these were mostly reducible cases on young children. A number of measures devised for the relief of hernia during the past ten years is large. My custom has been to give them all attention and treatment, and adapt my course according to the type of the infirmity at hand. Among the strangulated the most instructive and most satisfactory in results were the complex cases of hernia with disease of the intestines, with hydrocele or tumor of the cord in elderly men. There were three cases of very large umbilical hernia in women, they were all large, very fatatious. All did exceedingly well. There were four cases of vast scrotal epilocele in men. The three strangulated cases were all in men, two recovering. The man who died had a gangrenous hernia, and had septicemia at the time of operation. It is my practice to always operate on strangulated hernia under local cocaineization, otherwise the patient will be greatly prolapsed, or there is much vomiting. In conditions of great shock my experience has been that pulmonary anaesecia greatly increases the mortality. The operation for strangulated hernia should have a very low death rate, provided there has been no delay and no forcible taxis.

CASES ANORECTAL HEMORRHOIDS, RECTAL ULCER, FISTULA, ABSCESS OF THE PROSTATE OCCLUDING THE RECTUM.—A considerable number of cases of homorrhoids have come under my care since the beginning of last year. There were several cases which came to be treated for piles, who had benign or malignant stricture. Rectal ulcer; one had a polypus; one had a large prostatic abscess. In all cases presenting symptoms of hemorrhoids it is often of the greatest importance that in examination the first step consists in a high digital exploration of the rectum because in strictures or coprostatic impaction in the act of defecation strangulation is apt to occur. In one case of a young woman of 26, she had been operated upon, and after a week left the hospital and came under my care for the treatment of "new piles," she blamed her former surgeon for not removing the "roots." On high examination I came on a hard, horny abscess on about a level with the peritoneal reflection. The cancer had so widely inflated and incoltrated that excision was out of the question. Of late it has been my practice to always advise tapping in conducting the feces through the abdominal wall. In treating rectal diseases it is always well to note that owing to the difference in anatomical arrangement, the relations of the parts and the functions, sex plays an important role; hence in females the diseased parts may be reached, if low down, through the vagina. Hemorrhoids will be consulted for more frequently than any other lesion. The patients often seek relief by any means, though there are many who have an aversion to any cutting procedure, however simple. In many hands rectal digital examinations combined with cocaineization, compression or injection, has never failed to effect a cure. It requires persevering application and a longer time, but with it has never failed provided only that my patient did not lose courage and disappear.

In this connection it may be recalled that the rectal root is of great value in the diagnosis of prostatic and bladder lesions in the male, and of lesions on the uterus and appendix in the female.

SUDDEN DEATH.*

By LOUIS SCHWAB, M.D., Cincinnati.

When a death occurs suddenly in a person previously considered to be in good health, the law is usually invoked to institute inquiry and make proper return to court as to cause.

In the discharge of his duty the public official has in mind that death may have been caused by conditions other than natural. This doubtless is the outgrowth of a tendency on the part of the public to suspect crime, and, although not well founded in the majority of cases, it is best for the protection of all concerned that a careful inquiry be made and recorded, and by so doing establish suspicion or dispel it entirely. A failure to record investigation of this kind frequently leads to perplexing difficulties least anticipated at the time.

Brouardel, in referring to this subject, says: "An individual dies suddenly, death has been preceded by a loss of consciousness more or less prolonged, by coma or by vomiting. The dead man is buried. The friends of the deceased, as they are following the funeral, are disturbed by the thought that they themselves may also be carried off in a few hours, and begin to discuss the circumstances in which the deceased met his death. Comments are made freely. If by the fact of the death some one is to succeed to property, and if the heir should be a man in embarrassed circumstances, to whom such a windfall would seem an unhoped for stroke of good fortune, suppositions become more definite, suspicions are expressed openly, and the law is set in motion; an inquiry is held, and in three or four weeks after the decease exhumation is ordered, so that post mortem examination may be made." None but an individual with much experience in these affairs could make a statement so explanatory of the suspecting nature of people, not only in France, but in all communities; and it is given as a further reason why death occurring suddenly should be officially noticed. The writer has frequently been able to satisfy inquiries made by distant relatives because record was made and preserved, fully describing all circumstances, the absence of which would only have fostered mischief.

---

*Read before the Ohio State Medical Society, Columbus, May 10, 1900.

In his work on medical jurisprudence Taylor says: "In all instances of sudden death there is generally a strong tendency on the part of the public to suspect poisoning. They never can be brought to consider that persons may die a natural death suddenly, as well as slowly; or that death may really take place slowly, and yet be due to poison." This statement has reference to poison administered with criminal intent.

Such instances are doubtless very rare; and yet there may be practitioners present who, in their experience, have perhaps been in the presence of cases in which the symptoms were mysterious, misleading, and unyielding to a degree that warranted an unexpressed belief that the conditions were not the outcome of natural causes. In such cases, however, death does not take place suddenly, in the sense that it came without warning, or was to some degree unlingering. "That which has received the name of sudden death, both among ordinary people and in the law courts, is a death which is not preceded at all, or only for a short time, by morbid phenomena."

During the past year and a part of the present, 252 sudden deaths —152 males and 100 females—were reported to the Coroner of Hamilton County in which violence or casualty played no part. Of this number, 83 were over sixty years of age, 92 were between forty and sixty, 52 were between twenty and forty, 4 between ten and twenty, 21 in child life, the greater number occurring in infancy. The cause of death in 190 cases was attributed to disease of heart and blood vessels, in 71 cases to the brain, in 32 cases to the kidneys, in 14 cases to the lungs, in 5 cases to the bowels, in 3 cases to stomach hemorrhage, diabetic coma 1, heat 2, shock 2, eclampsia 13. In many of these cases the cause of death was determined by age, previous condition, and by circumstances connected with the fatal result, assuming the usual cause of sudden death, according to the doctrine of Bichat, to be either in heart, brain or lungs. When the family physician had been summoned to the scene his opinion, based upon acquaintance with deceased in life, was usually accepted. In many of these the cause of death was only inferential, and was determined by no other evidence than that alluded to above.

Post mortem examination was made whenever it was possible to obtain consent, which you will readily infer was not often granted, particularly in such cases as seemed clearly due to causes natural.

When, however, the death occurred in an unusual place, away from home and friends, or in a person of apparent health, whose social life was somewhat peculiar, or where financial interest such as life insurance was involved—in short, where a clue to the cause of the fatality seemed mysterious—more thorough examination, by autopsy and stomach analysis, was made in order to make a more satisfactory finding.

A very interesting case, illustrating the value of autopsy, occurred last October. Early in the evening, a young woman perhaps thirty years of age, was noticed to fall to the floor of the depot in which she was waiting for a train to leave the city. She became unconscious at once. A patrol wagon was called, in which she was taken to the City Hospital, where she was pronounced dead. Her body was accordingly sent to the morgue. From her dress and appearance she seemed to be a person of fair station in life. There were no marks of violence to be seen on the body. Her purse contained money, and a few papers, but nothing could be found by which she could be identified. Her railroad ticket indicated whither she was going, and by it we were able in a few hours to locate the family with whom she had been living for many years as a trusted servant. Nothing could be obtained from friends or from relatives to explain the sudden death, whereupon an autopsy was made which revealed a ruptured aneurism of the aorta. The reason for her consulting a physician, which it was afterward learned she occasionally did, was now fully explained.

Another case in which it was essentially necessary to fix the cause of death for the purpose of preserving the good name of the deceased, and thereby relieving a very excellent family of great distress, occurred in March, 1899. A young man, single, thirty-five years of age, was found dead by his sister about 8 o'clock in the morning in the office of his factory. She had gone to the office, to which none of the employes had that morning been called, to telephone to a friend with whom she judged her brother had spent the night, and was horrified to find the young man was dead upon the floor. The office had every appearance of business preparation; the safe was open, the desk was arranged as though he had been at work on the drawings which were spread upon it, and implements used in this work were scattered about ready for use. On a chair near his desk was a small glass graduate containing about an ounce of yellowish fluid. The deceased, neatly dressed, was found lying on the floor near his desk, in front of a small heating stove. He was on his back. His face was turned upward. His hat was on his head, and one arm resting on a chair, which was partly overturned. The skin on his nose and here and there over the cheeks was denuded in little patches; slight punctures could be seen on the rims of the ears, the tips of the fingers and the margin of the lips. There were no other marks of violence. A gold watch and other valuables were found, together with important papers. Nothing seemed disturbed. While making these observations a young man appeared, from whom it was learned that a business partnership with the deceased was to begin on the next day. Money had been advanced the young mechanic with which to buy new machinery, and only a day or two before his demise the deceased had drawn several hundred dollars for his personal use, and seemed at that time in good health and in the best of spirits. The fluid in the graduate was diluted fluid hydrastis; the blemishes on the face were caused by rodents. It was evident that the body was exposed to these pests all night, and that death came while the young man was studying his drawings.

The family physician, who was present, recalled occasional dizzy spells, with headache, following a fall from a bicycle two years before, severe enough at times to put the patient to bed for a day or two. Suicide was strongly suspected by many who were present. An autopsy however, cleared the mystery by showing the pericardium distended with blood from a ruptured sacculated aneurism of the aorta just above the heart. Stomach analysis negative. Aneurism had never been suspected during life. The result of this examination was a comfort to his family and friends, if for no other reason than that it put at rest all suspicion of self-inflicted violence.

In discussing the cause of sudden death, Dr. Dixon Mann, in a paper read before the Manchester Medical Society, says: "Nearly one-half of the cases of sudden death from natural causes are due to heart disease which has existed for some time. Next to the heart, apoplexy and other brain lesions rank second, with complication on part of the lungs and kidneys ranking third, while all of these conditions are more or less interlaced with inordinate use of alcohol." The results given in the table already quoted harmonize to a very great degree with these conclusions. It must be borne in mind, however, that in the cases alluded to the cause of death was largely inferential, and not based upon thorough investigation by autopsy. Post mortem examination was made in forty-two cases, and represented those in which more careful and thorough examination was held necessary because of circumstances connected with the death. Of this number, seventeen were due to impaired kidneys; fourteen to disease of heart and blood vessels, of which six were aneurismal ruptures; while six were held to be due to brain lesion, of which five were hemorrhage and ought perhaps be more properly classed as disease of blood vessels. Of the remaining cases, one was the result of unrecognized pneumonia in a drinker; two ulcer of stomach, causing hemorrhage; and two to menigitis.

The number of autopsies made is scarcely large enough to form positive conclusions which organ of the body to hold most responsible for sudden death. The popular belief that heart disease in some form causes the greatest number of deaths is vigorously combated by Brouardel, who holds that sudden death is especially apt to be brought about by the kidneys, and we ought, he says, restore the humoral theory to a place of honor. This remark is not without significance, and the hope he expresses with reference to the humoral theory may not be so far from fulfillment. The author quoted further states, however, that "the renal lesion is not always the only factor," and alludes to the relation between the heart and kidneys, and because of this "combination the mechanism of death may be difficult to determine." With both organs implicated, it matters little which precedes the other; faulty elimination is a menace to life, and more frequently than we think results suddenly in death. "Death," says the French author, "supervenes when poison manufactured in the system can no longer be adequately removed by the diseased kidneys." Death due to the kidneys, he holds, is the most frequent form of sudden death.

A case illustrating this point occurred in January of this year. A German, fifty-six years of age, was found one Sunday morning dead in his bed by his wife. With the exception of a slight cold, which he had now and then, she had considered him to be in good health. He was a moderate drinker. He was industrious and worked each day as a porter in a large business house. He had gone to his room the night before in his usual health, and rested well the entire night. His wife occupied the same bed. She left the bed first to prepare breakfast. He was awake and spoke to her in his usual cheerful manner. She needed something from the adjoining store and started to get it. Before leaving she handed him the daily paper and his glasses, and he laughingly suggested that as it was Sunday he would be a little lazy, and read in bed. On her return from the store she found him still holding the paper, but he was dead. She was gone not to exceed ten minutes. A physician who was passing the house was called in and gave as his opinion that death was due to heart disease. Autopsy showed edema of brain, cirrhotic kidneys, and a slightly enlarged heart.

It seems a pity that of all the sudden deaths reported, autopsy was made in but one-sixth of the entire number, and yet in the few reported it will be seen that kidney lesion was found in a little less than one-half.

While the majority of cases reported were the result of diseases chronic in character, not a few deaths have occurred suddenly in which the disease was acute. Of these, ten were in early life, and were due to meningitis. A little girl, seven years of age, returned from school at 11 o'clock in the morning and died at 2 o'clock the same afternoon, before any help could reach her. She had seemed to be in her usual health when she left for her school work in the morning, but came home at the time indicated suffering severe headache and vomiting. Autopsy showed marked meningeal inflammation. Of this type there were two in which post mortem examinations were obtained, while in eight more the history warranted the strongest belief that death was due to the same cause. Meningitis is, however, one of the diseases cited by observers as occurring suddenly in fatal form in persons in whom there was no suspicion of disturbance in general health.

Two fatalities from shock are reported. One occurred in a woman who, nine days before, had been delivered of a healthy child. She was making an excellent recovery, but because the lochial discharge was very offensive the physician in charge concluded to wash out the uterus. The usual preparations were made with great care. The water used was slightly carbolized. The flow from the fountain syringe had scarcely started into the uterus when the patient complained of feeling strange, and died in a few minutes.

The other case was a child five years old, who was struck in the abdomen by a child's play ball thrown by a little boy. The blow seemed very light, and was witnessed by the parents, who were grief stricken at lifting the boy from the ground to find him dead. No contusions were found on the body.

Many of the deaths occur during the sleeping hours, and are not discovered until the following morning. Evidences of struggle are, as a rule, wanting. Often the position in which the dead are found is that assumed in sleep, indicating that death came during the hours of rest. This is observed most frequently in the aged. Sometimes the end comes while a person is sitting in a chair, this attitude being maintained many hours.

Early one morning an elderly lady, to whose health attention had seldom been called, was found dead sitting in her chair. She was last seen at 10 o'clock the night before, reading, and was left thus interested on the promise that she would not sit up too long. Her open book was found near the chair, in which she was discovered by the family, with features as peaceful as though she was in restful sleep. The chair in which she died and in which she maintained the sitting position was an ordinary sewing chair without side supports. The body was cold and very rigid. The excellent physician who was called, and who was intimately acquainted with the family, gave it as his opinion that death was due to cardiac paralysis.

Dr. J. A. Haerr, who was coroner of the county preceding the present term, recorded the finding of a naked woman dead in her room standing at a dresser. One hand was resting on the marble top. Her body was rigid. She had been a very hard drinker, and during the early morning of the day she was found had drunk a quart of whisky. Alcoholism was given as the cause of death.

In the greater number of cases a previous history of bad health was readily obtained by careful inquiry, but in many no evidence of previous disturbance in general condition could be made out, notwithstanding autopsy revealed marked organic lesions. These cases may be explained in several ways. Thus, a diseased condition may exist in persons without their knowledge, or impairment of health is suffered without complaint by persons who are obliged to toil because of home or other responsibilities; and next, that sudden death very often occurs in drinkers whose habits have been concealed from near relatives; and again, where the drinking or other vicious habits are known to friends and relatives it is frequently observed that every effort is made to evade a record of the weakness.

In chronic drinkers a great variety of lesions may be found, but the kidneys, liver and heart are the organs most generally outraged. It is fair to infer that in the greater number of cases of kidney disease recorded, chronic alcoholism played the leading rôle in production.

In acute diseases like pneumonia it has long been observed that chronic alcoholism exerts a peculiar influence over the course of the disease, whereby its existence is masked and sometimes not discovered until after death.

A man who was an habitual drinker was one day picked up by the police because he was making a display of himself. He was placed in a cell to sober up. After muttering for a few hours he quieted down, and when looked after later he was found dead. He was taken to the morgue, where an autopsy showed a typical lobar pneumonia, well advanced in the first stage. There was nothing in his behavior when brought to the station-house to indicate that his condition was associated with anything but whisky.

The hospital physician, as well as the general practitioner of much experience, when called to a besotted man or woman, has long since learned to suspect the presence of some latent grave complication, and usually expresses his conclusions accordingly.

It is asserted by observers who have given the subject of sudden death vastly more thought and research than the writer that in some cases port-mortem examination affords no evidence as to cause whatever. Death by inhibition would in all likelihood reveal no lesion, and many cases of convulsions in children would yield but poor results on autopsy if the history of details was absent. But one case of this kind was recorded by the writer, but because of certain circumstances the death was considered due to self-inflicted violence, and therefore not included in the deaths due to natural causes.

The deceased, a young man of magnificent physique, was found in a lonely spot near the Ohio River, about a mile from one of the villages in this county. He was well dressed, had on his person a few valuables and papers indicating who he likely was. It developed that his home was in a distant city, that he was a nurse and had come to Cincinnati a few days before his death. He was last seen alive twenty-four hours before finding his body. There were no marks of violence on the body. Autopsy was negative in every particular. No lesion was detected in any organ, and the stomach analysis was equally unsatisfactory. It has always been the opinion of the department that death was the result of poison injected hypodermically.

When this subject in all its phases is considered, the value of a record as complete as it is possible to be made will be apparent, more especially when by it is shown that death may occur suddenly without previous history of illness, and with no discernible lesion on autopsy, or as the result of the slightest trauma (inhibition), or that it may be due to conditions of great gravity not recognizable in life, and for that reason may account for many unexpected fatalities following operations or those recurring during the administration of an anesthetic.—*The Cincinnati Lancet-Clinic.*

WHEN TO OPERATE IN APPENDICITIS, AND WHY.*

By JOHN P. MURPHY, M.D., Chicago.

The question of when to operate and why, I will reverse in my answer—why we operate, and when? Why do we operate at all in cases of appendicitis? What is the object of an operation? Why do we not treat all of the cases with internal medication as we did before the operative furor, so-called, took possession of the medical profession? Is it because we desire to operate for financial rewards? Is it because we desire to operate for the pleasure of doing so, or is it because we operate to reduce mortality? Has the mortality been lessened since we began to operate on cases of appendicitis? That is the first general question to be answered. Answer it with statistics, and we are told that they are not of special value; that they can be turned to all sorts of purposes. Answer it from general observations, and we are told that they are fallacious. Answer it from individual observation, and we are told the individual is misguided. What is the general impression of the medical profession concerning the mortality of appendicitis since operative treatment has been instituted, as compared with the mortality before. Are as many people dying to-day from "inflammation of the bowels" as there were ten or twenty years ago? What does the general profession think of that? I feel certain that if we take a vote on it, it would be enormously in favor of the position that the number is very much smaller now than it was ten years or twenty years ago. Is the reduction in the mortality due to the better medical treatment, or is it due to better surgical treatment? I believe it is due to both, but that the credit is enormously in favor of the better surgical treatment.

To speak of the subject from a mortality standpoint, I must exclude three classes of cases and retain only one. I will exclude appendicular colic. I believe there is such a thing, but it is not a surgical lesion. I believe that a diagnosis of appendicular colic can be made. I will exclude to catarrhal appendicitis as it is generally understood. I believe it does not materially, if ever, jeopardize the life of the patient; therefore we will not consider it from a mortality standpoint. I will exclude partially recurrent appendicitis, not the acute infective recurrent variety, but the mild, so-called recurrent appendicitis, which may be either a catarrhal appendicitis, or an appendicular colic. What I wish to include in our consideration of the subject to-night is acute virulent infective appendicitis, and we may leave out the word *virulent*, and speak of acute infective appendicitis. Is it better treated with operation or without it? Can we make the diagnosis of that disease and differentiate it from the other three varieties? What is the mortality in that disease, if properly and timely treated? Would we have a mortality at all, if it were so treated?

---

*Stenographic report of remarks made before the Chicago Medical Society April, 1900.

In considering the subject of operation, we must ask ourselves what are the pathologic conditions for which we now operate? We operate, first, to remove an organ which we recognize as being acutely infected, and I may say that 99 per cent. of the cases, in the first twenty-four hours, this infection is confined to the wall of the appendix. I omit one per cent., because I have, in something over nine hundred cases, seen four of primary perforation from fecal concretions, and I am willing to admit that a few more may have occurred which had advanced to a degree rendering it impossible, at the time we operated to recognize the primary condition. Two cases in which we have primary perforation and primary infection of the peritoneum before the end of the first twenty-four hours I put at 1 per cent. Let the pathologic process advance to the second twenty-four hours. During this time the pathologic conditions may vary from an increased quantity of pus or inflammatory debris in the appendix to a complete gangrene and necrosis of the wall, or to perforation of the appendix, with a circumscribed or general peritonitis at the end of forty-eight hours. Does that occur often? Yes, in the last twelve of the forty-eight hours, from the thirty-sixth to the forty-eighth. Does it occur between the twenty-fourth and thirty-sixth hour? Not so often, but much more frequently than it does in the first twenty-four. Let us follow the condition. Pass forty-eight hours, and with each hour the number of cases increases in which the infection is extending beyond the boundary of the appendix, and then come the lateral supports of the appendix. *First*, the almost intelligent omentum which comes down and encapsulates this infected material as soon as a perforation is threatened. *Second*, adhesion of the intestine to the wall at the site of threatened perforation. *Third*, the adhesion of the appendix to the parietal peritoneum of the anterior or posterior abdominal wall, to the wall of the bladder, to the tube, ovary, uterus, or to any peritoneum covered structure with which it comes in contact, and I say "covered by peritoneum," because in the majority of cases the appendix is within the peritoneum. These collateral supports, do what? If the infection is of a certain type, when the wall of the appendix ruptures the adhesions form with sufficient rapidity to encapsulate and retain the infective material, and we have then, after forty-eight hours, with increasing frequency, a circumscribed abscess where the adhesions have taken place. This abscess continues to increase in size, depending upon the virulence of the infection, sometimes rapidly, sometimes slowly. What is the result of the formation of this circumscribed abscess? Conditions which occur favoring rupture of the abscess. *First* and most fatally into the free peritoneal cavity, not very frequent; *second*, favorably into the viscus to which the appendix is attached; *third*, less frequently, and extremely rare, in my opinion, the contents of this abscess empty back again through the canal of the appendix into the intestine.

When these conditions are present, what are the dangers? There is danger of rupture of the circumscribed abscess; danger of thrombophlebitis and general intoxication; danger of rupture into the ureter, or bladder, which may produce an unfavorable outcome; but in the large percentage of cases that recover, the abscess ruptures and empties back through the canal of the appendix into the intestine.

If we are to consider these pathological changes as they have occurred, and as we all know they do occur, can we, from the symptoms, tell much about these changes? One thing we can tell, and I speak very forcibly on this point, is that the train of symptoms in the beginning is so typical that we can make an absolute diagnosis inside of the first twenty-four hours; that at the time when we are able to make an absolute diagnosis the infective and dangerous material is still circumscribed by the wall of the appendix. Let us wait another twenty-four hours and make it forty-eight hours, can we tell at the end of this time the pathologic conditions from the symptoms? No. We can still probably make the diagnosis, if we have a fair statement of the case from the beginning. But can we say, at the end of forty-eight hours, from the symptoms manifested, that the case is progressing toward a favorable or unfavorable termination? No. In many cases we are able to make that statement. In many of the cases we are woefully disappointed in our opinions as to the pathologic conditions that exist in the abdomen from the symptoms produced, and I speak of the symptoms that are present in this order: *First*, pain. This symptom has a significance in making the diagnosis, on account of its intensity. It is of a colicky character, and we have all the various changes which were so excellently brought out in the paper of Dr. Lee. But can we say from the character of the pain, *when* the appendicitis ceases to be circumscribed by the wall of the appendix, and when it becomes a periappendicular abscess? Theoretically, yes; practically, no. Can we say from the symptoms that the appendix is or is not perforated, at the end of forty-eight hours? No. Can we say from the symptoms that the case is progressing in a favorable direction? No. The symptoms may subside: that is, the pulse may be as low as 84; the temperature may be as low as 99°; the pain may have entirely disappeared, and the patient's appendix be completely gangrenous without adhesions. That is what we may expect when we consider a dead appendix which does not absorb; a dead appendix does not give pain; a dead appendix does not adhere to its neighboring viscus. It remains free. At the line of demarcation it will adhere wherever there is an inflammatory exudate, but when it is dead it will not adhere. At the end of forty-eight hours, we are unable to say, from the subsidence of temperature, the lowering of the pulse, the absence of nausea and vomiting, from the favorable condition of these symptoms, what the pathologic condition is in the abdomen. Are we able to state that the abscess and peritonitis are circumscribed? In a large percentage of the cases, yes; and when the abscess becomes circumscribed, that is, when we have passed the third twenty-four hours, and the fourth twenty-four hours, and the patient manifests no symptoms of reinfection, so to speak, you can assume that the abscess will remain circumscribed, and produce a necrosis in the wall of the bowel, and go on to a favorable recovery. We are occasionally, but not often, disappointed in this assumption.

Why do we consider this pathology for the purpose of deciding on the necessity of an operation? There are cases of appendicitis dying every day. Why are they dying? Not because they are not within the reach of competent surgical treatment. I notice that a large percentage of them die in our large cities and among popular people, very influential people. Why? Is there as large a percentage of cases dying from this disease in the County Hospital, or the Alexian Brothers' Hospital, as there is in our large cities among the popular and better known class of people? I doubt it very, very much. Why? *First,* because the popular or important class are treated conservatively, and by conservatively I mean cowardly, because the medical man is either incompetent of making a positive diagnosis, on which he is willing to risk his reputation; or, *secondly,* cowardly, because the surgeon is not ready to face the music and take the responsibility of the risk. Don't this occur? I leave it to yourselves. Look over the horizon of your friends and the people you have known who have died from appendicitis, and ask yourselves that question and answer it to your own satisfaction. If we can make the diagnosis in the first twenty-four hours, I believe we can operate during that time with a mortality of two per cent. at the maximum, as I have never seen a death from a case operated upon inside of twenty-four hours. I believe two per çent. is a maximum. Have we more than two per cent. mortality in patients that are operated upon on the second day, or in patients that are treated medically for the second, third, or fourth days, or in patients operated upon on the third, fourth, or fifth days? We certainly have, and it is enormously more than two per cent. Does the danger of operation increase with time? Yes, very materially, because the pathologic conditions in the abdomen have changed. In place of the septic material being circumscribed by a good, strong, firm capsule in the wall of the appendix, as it is in the first twenty-four hours, and often as long as forty-eight hours, it has escaped from there; and set up a septic cellulitis and septic peritonitis. It has infected the lymphatics leading from that position, and this septic cellulitis and septic peritonitis may be of such a variety as not to be under our control, with or without operation, the infective material having escaped beyond the boundaries of the appendix. It has been said that when the case passes forty-eight hours and is in good condition, we should let it go. Yes; if it has passed the first seventy-two hours I let it go, and when it passes that we have a mortality greater than two, three or four per cent. I have seen some of these cases recently, and have been guilty of treating some of them conservatively. I regret it, and I apologize to myself, because I have violated one of the principles which I believe should govern a man in his actions, namely, that when he is getting satisfactory results by a certain line of procedure he should not deviate; he should keep on in that line. We must admit that we have a mortality of more than two per cent. in cases that go beyond forty-eight hours. De we operate only for mortality or for what purpose do we operate? We operate for the purpose of lessening invalidism and for the purpose of preventing recurrent attacks, to say nothing of lessening the danger to life. That class I leave out of consideration at once, because I believe what we are intended to discuss to-night is the question of operation for immediate and primary infection.

When should we operate? If the danger increases with time; if the mortality increases with time, and if the period of convalescence increases with the length of time which elapses between the onset of the attaçk and the time of operation, there is no ground that I can see for putting off operation, if that is the line of procedure, beyond the first twenty-four hour. If we are going to operate at all, if it is the decision that appendicitis is an operable disease, if it is the decision that we can take all of the cases, one with another, and in fairly competent hands get a mortality of two per cent., I believe that the indication is to operate, and the only time I believe it is possible for any man to have a mortality of two per cent. is inside of the first forty-eight hours. Inside of the first twenty-four hours the chances are much better and the surgeon is much more certain of his ground. Will you operate when the case has gone to the third or fourth day? That depends. If the case has gone to the third or fourth day, and you have a circumscribed abscess, with low temperature, the indications are that the virulence of the intoxication is not great. I say circumscribed abscess, and by this I mean the induration that is so frequently found. Then, I believe, we can with safety wait. I think, however, even then, that the risk is greater than the risk of operation at that particular time. I have treated patients of another class with expectant methods, referring now to cases of general septic peritonitis. What will you do with these? By general septic peritonitis I mean a condition in which we believe that the inflammatory process involves the entire peritoneal cavity. The patient has an accelerated pulse; he has a cold and clammy skin; he gulps; his abdomen is tympanitic; it has been impossible for him to have a bowel movement for a number of days on account of the paralysis of peristalsis. How will you treat such cases? Will you operate or not? In the Mercy Hospital, during the past year, I have had three cases of this class which were treated on a conservative basis, that is, I deprived them of all nourishment by the mouth. I resorted to gastric lavage in two of them on account of the frequent gulping. I injected saline solutions into the rectum and kept them absolutely quiet. All three died. I have in the past ten years treated a number of these cases by operation, and occasionally one of them would get well. I am willing to concede to the conservative man that he has the privilege of treating all cases of general septic suppurative peritonitis conservatively or operatively, as he pleases. He will get neither glory nor preservation of life from either of these procedures. I must say, however, with deference to the medical man, that he has not done one-half as much damage as the lukewarm or indifferent surgeon has done in reference to the subject of appendicitis. The surgeon who believes he can at the time he first sees a case of appendicitis make a differential diagnosis of the pathologic conditions that are present, and predict those which are going to occur, is mistaken. The surgeon, who, at the end of twenty-four hours, says that he can predict the course a case is going to take, from the appearance of the patient and the general symptoms manifested, is mistaken. The same holds true of forty-eight hours and of seventy-two hours. After a certain number of days we can with tolerable certainty predict the outcome of the case. I believe with most surgeons that we are unable to state in the first twenty-four hours what the course of a case is going to be. I believe every honest man admits that the mortality of appendicitis is greater than two per cent. I believe that every competent surgeon thinks that he can operate on a case of appendicitis, when the disease is still confined to the wall of the appendix, with a mortality of two per cent. or less. Therefore, my conclusion is that we are not justified in holding a single case of appendicitis beyond the first twenty-four hours after the diagnosis is made, and it is my belief that, in an enormous percentage of the cases, the diagnosis can be made as absolutely in the first twenty-four hours as it can at any other time.

THE CLINICAL SIGNIFICANCE OF ALBUMINURIA AND TUBE CASTS.*

By A. L. GRAY, M.D., Richmond, Va.,
Instructor in Anatomy, University College of Medicine.

In the presentation to you of a paper on this subject, I realize fully the amount of investigation in this line that has been made, and the more thorough research that is now in progress both in the laboratories of our colleges and hospitals, and also in those of the scientific physician of the present day; and I can but hope that we may at an early day bring order out of what seems to me to be a great state of confusion. When we are told by eminent authorities that the presence of albumin, and especially of the casts of the renal tubules, in the urine is of grave significance whenever found, at least for a continuing period, and their statements backed by limitless numbers of cases resulting seriously, and, on the other hand, men equally worthy of credence and fully as prominent as scientists in this line, make the positive statement that neither the presence of albumin nor casts is pathognomic of renal or other diseases, and that their absence is not to be construed as evidence that the most serious does not exist, what then is the general practitioner to conclude?

I propose to discuss first the significance of albumin alone; secondly, of the casts with the presence of albumin; and thirdly of casts occurring alone, or at least, when our usual tests fail to detect the presence of albumin.

As to the tests for albumin, I consider that the most satisfactory in general practice are Heller's contact test, the heat and nitric acid or the "crucial test," and the nitric-magnesian, which is more delicate than either of the other two, and has the advantage of not producing to so great an extent the many colored rings at the point of contact of acid and urine, formed by the action of nitric acid on the various urinary coloring matters, which obscure the albumin ring when it is not strongly marked.

It is well known that in applying Heller's test we often mistake for albumin the ring caused by other substances, first of which I mention the urates, or as it is said by Thudichum, the hydrate of uric acid. The ring produced by this substance on careful inspection is seen not to be at the point of contact of acid and urine, but as a broad haze some distance above the contact zone. Secondly, various resinous substances, such as copaiba, turpentine, santal oil, etc., cause a ring of resin to be precipitated when this test is applied; and it is reasonable to suppose that foods containing resinous matters which are excreted in the urine produce the same results. The application of heat in the former and alcohol in the latter will clear up the urine should the cloud be due to either.

Better and more delicate than the above is the heat and nitric acid test. Great care should be taken in this not to use an excess of acid sufficient to dissolve the albumin, which would, on the addition of the proper quantity, only be rendered more intense. For several reasons, it seems preferable to apply heat first, then to add the acid drop by drop, the reasons being that the addition of the acid frequently produces various changes of color, which may render the albumin cloud indistinct; an excess of acid may be added and the albumin dissolved; hot acid will sometimes dissolve albumin when cold will not; and, too, phosphates may be tested for at the same time, as they will be precipitated by boiling, if no acid has been added. Better than the ordinary way of boiling one or two drachms of urine in the test tube and then adding the acid, is to fill a medium-size tube about three-fourths full and boil only the upper portion, which may be done without difficulty. This leaves the lower portion for comparison and renders the slightest haze perceptible and in no way interferes with the subsequent addition of acid to confirm the test. Phosphates readily disappear when the acid is added, and instead of the brown or reddish purple color which not infrequently renders the test when applied in the usual way uncertain, we have nothing of the sort to contend with. By this test we may readily detect albumin in proportion of one to one hundred thousand and less.

The Nitric-Magnesian Test. (Test solution consisting of one part of strong nitric acid to five of a saturated solution of magnesium sulphate.)—This solution is perfectly clear and white, and having a specific gravity of 1.240, is readily applied by contact method. It has the advantage of not fuming, is not corrosive, and the ring precipitated by the presence of albumin is seen in uniformly clear and colorless fluid not obscured by the coloring matter of the urine. By it albumin in proportion of 1 to 150,000, or less, can be perceived.

Having discovered albumin, and that beyond question, what conclusion are we to draw? I am convinced that its mere presence is of very little significance and of no more value in the diagnosis of renal disease than many of the other symptoms to which we attach minor importance. Excluding semen, pus, or blood, as a possible cause, for it is clear that their presence, from whatever source, will give us a reaction for albumin, and having fully determined that the urine was albuminous when it left the kidney, let us look for causes other than renal disease.

Are we to diagnose nephritis in every case of albuminuria occurring in pregnancy? If not, then how can we account for the albumin? We can readily see that in the latter stages, when the uterus, distended by its contents, presses upon the blood vessels of the return circulation, thus obstructing the flow of blood from the kidney, a passive congestion is produced, hence the leakage. That there is no kidney lesion is evidenced by the speedy return of the majority of these cases to normal after labor, at term or before. Under this same class may be mentioned the albuminuria of other forms of obstructed or impeded circulation, such as we find in various valvular cardiac lesions, and degenerations of the heart muscle itself, all of which produce congestion of the kidneys to a greater or less degree.

Next, I will mention the albuminuria attendant upon various febrile diseases, especially typhoid fever, in which disease it is said by some investigators to be a constant symptom. However, I am forced to disagree with those who hold to this theory, as I have been unable in a number of cases to detect even the merest trace, while in others albumin was present in variable amounts. Is there necessarily renal lesion in these cases? It has been observed that during the progress and convalescence of cases treated by the Brand method, albuminuria is very constant. We can certainly account for its presence by the hyperæmia of the kidneys produced by the fever itself in the former, and, in the latter case, especially by the temporary surface anæmia, and resulting internal hyperæmia caused by the cold baths. This symptom disappears as convalescence progresses, without treatment directed towards the condition itself and with, in the vast majority of cases, absolutely no evil consequences resulting.

It is held by some that Bright's disease is produced by defective diffusion of the blood and faulty assimilation, causing the albumin to be excreted as waste matter through the kidneys, and that this abnormal work ultimately produces change in the organs themselves. Should this theory be true, and there are many points to substantiate it, could not this condition, in a minor degree, produce albuminuria for an indefinite period before causing perceptible change in the kidneys themselves, or symptoms pointing to their involvement?

That we have an albuminuria from nervous influences is evidenced by its occurrence after epileptic seizures, insanity, delirium tremens, and paralysis. Injury to the floor of the fourth ventricle has been shown to produce this condition also, the exact method of production, however, being still disputed: whether it is due directly to the injury itself, or whether it is a secondary result from faulty circulation produced by the injury.

Then, too, we not infrequently find albumin after violent muscular exercise, as in long distance running, and in children, especially healthy boys, living in a constant state of activity, in many of which cases the condition of albuminuria is discovered accidentally. Such instances suggest the temporary suspension of the function of preventing the leakage of albumin on the part of the capsular and tubular epithelium, caused probably by the rapidity of the circulation, and resulting hyperæmia conditions. The above and similar conditions are probably responsible for the belief that normal urine may contain albumin, as expressed by Senator, Stewart and others, whereas it is shown by Leube and Winternitz that the urine of persons under strictly normal conditions contains no albumin whatever. It is clear, therefore, that there are many cases in which there is no renal disease, although albumin is present; but that it is a purely physiological result cannot, I think, be established. There must, at least, be an abnormality either in the composition of the blood or in its circulation.

As to the daily quantity of albumin excreted, we often have exaggerated ideas. We not infrequently obtain by boiling, a precipitate of albumin apparently equal in bulk to one-half or three-fourths of the urine tested. Should the fluid consist of pure blood-serum, the amount of albumin would be only seven or eight per cent., of which four and five-tenths per cent. is serum-albumin, and two and five-tenths per cent. to three and five-tenths per cent. serum-globulin; therefore, the maximum amount that urine can contain cannot be greater than three per cent. or four per cent. Supposing a maximum of four per cent. to be present and the daily urine excreted to be forty ounces, the albumin eliminated will be about one and a half ounces per day; so that a pound of beef would replace the amount of albumin excreted in a week. The quantity of albumin in ordinary cases is not greater than one per cent. therefore, we readily see that the drain on the system is due not so much to the amount of albumin lost as to the disease of which albuminuria is a symptom.

Turning to the casts, or "cylinders," as they are sometimes called, they are most accurately and conveniently found by examining with a moderately low power (one-half or three-fourths inch objective) a drop of the precipitated sediment on a dry slide and using no cover glass. It is of primary importance that we should understand their mode of formation and composition.

The theories that hyaline, and the basis of granular and epithelial casts, etc., are composed of secretions from the epithelium of the tubules and, by others, that they consist of the fibrin of the blood, are giving place to that of the coagulation of the albumin in the renal tubules (Neubauer and Vogel, Urinary Analysis, 9th edition: Millard and others.) According to this theory, which is most probably the correct one, the presence of a few hyaline casts may be expected whenever there is renal albuminuria continuing for any considerable period, and their presence in small number, and without pus, blood or renal epithelium, must be of very little moment.

Of vastly more importance, however, are the granular and epithelial casts. For their presence there must, of necessity, be some change in the parenchyma of the kidney itself. The epithelial form necessarily results from a denudation of the tubules, and the granular from a breaking down or granular degeneration of the kidney substance. The presence of hyaline casts containing oil droplets, pus, and epithelial cells in any considerable quantity, may be considered pathognomonic of renal disease. That waxy casts only occur in the grave chronic and deep-seated renal affections, is accepted by authorities generally. My own experience seems to be in accord with that theory.

Occasionally, in examining non-albuminous urine microscopically we are surprised to find hyaline casts in varying quantities. This condition has probably produced the belief that these casts were not albumin, but fibrin, or the product of inflammatory irritation of the epithelial cells, resulting in their disintegration. Such a state of affairs may be readily accounted for by an albuminuria existing at a prior time, however transient it may have been; or that, in some cases, the tests for albumin applied were not sufficiently delicate to detect the small amount present. It is stated that any cause which will be productive of albuminuria will also produce casts. Let us not, nevertheless, consider that their presence is purely physiological in any instance, but abnormal, however transient may be the stimulus producing them.

In conclusion, therefore, let us weigh carefully all symptoms, not jumping at once at a diagnosis when we find casts and albumin. Nor should we exclude the most serious renal disease when we fail to find them—for it often occurs that in an advanced stage of chronic interstitial nephritis, they may both be absent for an indefinite period, but by careful and repeated examinations, take their presence or absence, variety, quantity, or quality, all into consideration, lending not too much importance to these alone; but, by adding them to the other symptoms, diagnose accordingly.

901 East Clay street.

Bibliography.

Coleman, *Am. Syst. of Pract. Med.*, Vol. 2.
Millard, *Bright's Disease.*
Purdy, *Bright's Disease and Kidney Affections.*
Tyson, *Pract. Exam. of Urine*, ninth ed.
Simon, *Clinical Diagnosis*, second ed.
Tuttle, *Journal Am. Med. Ass'n*, March 31, 1900, p. 786.

THE EFFECT OF SUMMER HEAT UPON THE PUBLIC HEALTH.*

By HENRY DWIGHT CHAPIN, M. D., New York.

The effect of climatic changes upon the public health is a subject of great interest and importance. When certain conditions are known to be approaching, it is the duty and privilege of preventive medicine to indicate plainly where the dangers lie, and what may be done in an endeavor to obviate them. The depressing effects of continuous heat may be shown most on the nervous and digestive systems, and the extremes of life are especially vulnerable. With reference to the gastro-intestinal tract, not only does great and continuous heat depress the digestive power and hence make for disease, but the food supplies also depreciate from the influence of heat, and fermentation has frequently begun before the nutriment is ingested.

A glance at the summer death rate from gastro-intestinal diseases, in comparison with the winter rate, is suggestive in this connection. Four summer months are compared with four winter months during the past five years in the following tables, which will be preceded by a statement of the mean temperature and mean humidity of the summer months:

	Mean Temperature (Fahr.)				Mean Humidity.			
	June.	July.	Aug.	Sept.	June.	July.	Aug.	Sept.
1895..	72.80°	72.50°	75.60°	70.80°	71	78	64	63
1896..	69.80	76.80	76.10	67.20	69	72	69	74
1897..	67.40	75.90	73.20	66.90	69	71	69	65
1898..	71.10	76.00	75.30	70.20	73	80	78	69
1899..	74.10	76.20	75.11	66.10	68	66	75	64

	Deaths from Gastritis, Gastro-Enteritis, and Enteritis.				Deaths from Diarrrhœa, Under Five Years.			
	June.	July.	Aug.	Sept.	June.	July.	Aug.	Sept.
1895........	112	344	223	179	281	1,084	564	441
1896........	148	313	260	176	363	880	446	245
1897........	116	301	248	203	220	914	650	319
1898........	75	318	304	244	157	834	643	461
1899........	150	391	221	210	176	608	276	187
Totals....	605	1,667	1,256	1,012	1,197	4,320	2,579	1,653

---

*Read before the Medical Society of the County of New York, May 28, 1900.

	Nov.	Dec.	Jan.	Feb.	Nov.	Dec.	Jan.	Feb.
1895........	34	54	44	51	41	35	49	29
1896........	34	57	61	38	41	36	38	36
1897........	43	42	47	60	46	30	39	42
1898........	56	56	50	50	31	26	20	23
1899........	59	54	43	41	23	25	15	34
Totals....	226	263	245	240	182	152	161	164

I am indebted to Dr. Tracy for access to the Board of Health records.

A glance at these tables shows the enormous increase of the summer mortality from gastro-intestinal diseases over the corresponding winter months. It is especially noticeable in the deaths from diarrhœa, in children under five years. One encouraging feature, however, will be seen—that there is a certain dimunition in the death rate at this period during the past five years. This is doubtless due to the improved sanitary condition of the city, with a stricter supervision of the food supply, especially milk. There has also been a certain improvement in drainage, sewerage, and the ventilation of dwellings.

It has long been ascertained by sanitarians that the death rate among infants, and especially the prevalence of diarrhœal diseases among them, are sensitive tests of the general sanitary condition of the community.

One of the greatest dangers during the heated term consists in sunstroke. The following table shows the deaths from this cause during the past five years, during the four summer months:

DEATHS FROM SUNSTROKE.

	June.	July.	August.	September.
1895..................	45	4	18	13
1896..................	5	30	725	..
1897..................	3	28	2	6
1898..................	..	75	46	253
1899..................	80	10	5	..
Totals............	133	147	796	272

In looking over the records of the Board of Health, the most fatal recent years from sunstroke are 1892, 1896, and 1898. The deaths from sunstroke during 1896 reached the enormous number of 765; of this total 671 occurred in one week, and 52 during the weeks immediately before and after, making a total of 723 during the three weeks covering the extreme heated period. If we take the day when the greatest number of deaths occurred as a culminating point of the period of extreme heat in each case, including in each period all days when the temperature rose to 90° F. or more, we find that the culmination in 1892 was on the fifth day, and in 1896 on the eigth day. The greatest number of deaths in any one day was 350 in 1892 and 386 in 1896. The noticeable increase in the number of deaths began on the second day in 1892 and on the fifth day in 1896. Whether this postponement of the fatal effect of extreme heat has been due to a difference in other meteorological conditions than heat alone, or whether it is due to an improved sanitary condition of the city, rendering the population more vigorous and more capable of resisting the morbific effects of heat, cannot be positively determined.

The year 1898 was an exceptional one in that the vast majority of deaths from sunstroke, 253, occurred in September.

A most depressing influence, where there is a continuance of great heat and humidity, is the coexistence of hot days and hot nights. If the nights are so warm that sleep is interfered with, there is little opportunity for recuperation from the exhaustion of the day.

Depression of the nervous system by heat is apparent in lassitude and a general vulnerability to disease. In two nervous affections, the death rate is actually higher in summer than in winter. Thus, during the four summer months of this period there have been 1,399 deaths from meningitis reported, while during the months of November, December, January and February of the same period, there were only 1,040 deaths from meningitis. Probably a certain number of cases of meningitis reported were, however, spurious hydrocephalus following infantile diarrhœa. During the five years there were 781 deaths reported from convulsions, while during the winter months the number reached only 737.

In looking up the deaths from alcoholism, there have been fewer reported in summer than in winter, 460 being the number for the summer months, against 525 for the four winter months of these five years. It is well known, however, that alcoholism is a common predisposing cause of death in sunstroke.

The actual increase of sickness in any community due to summer heat is hard to estimate; everything possible, however, that preventive medicine can suggest should be employed to obviate the deleterious effects of heat. A consideration of this subject must include in its scope an oversight of the city, the house and the life and habits of the people. The responsibility of the city is to be doubly watchful in the interests of public health; the streets must be kept scrupulously clean, all garbage and decaying animal and vegetable matter must be promptly removed and destroyed. Perishable foodstuffs, particularly cow's milk, require the greatest watching and regulation. As hinted above, the work of the board of health in this connection has already borne fruit.

With reference to milk, while a minimum proportion of cream is now called for by law, there should be a certain standard of freshness as well. The number of bacteria found in each cubic centimetre of milk bears a direct ratio to the age of the milk, as well as the proportion of lactic acid. What is needed is a better regulation of the city's milk supply as its source, viz., the dairy farm. A committee of this society is now at work on this problem and hopes to be able to secure a fresher and cleaner milk for all desiring it.

A very efficient way in which the city can modify the deleterious effects of the heated term is by planting trees and furnishing small parks and breathing places. In the *Popular Science Monthly* for February, 1899, Dr Stephen Smith shows how trees are of the greatest utility in modifying and equalizing climatic conditions. He calls attention to the fact that an average temperature of the air of 54° F. is best adapted to public health, as at that temperature the decomposition of animal and vegetable matter is slight and normal temperature is most easily maintained. Every degree of temperature above or below this point requires an action of the heat-regulating power to maintain a proper equilibrium.

In a densely populated city, the summer heat is conserved and reflected by the stone and asphalt of the street as well as by the bricks and mortar of buildings. Even during the night, the stones, by retaining their heat, prevent any appreciable fall of temperature. Here is where the modifying effects of trees can be most beneficial. As trees maintain an average mean temperature of 54° F. in all seasons, it is easy to see what a constant cooling influence they possess in an atmosphere of 90°. Add to this the constant exhalation from the leaves of watery vapor, that has been absorbed from the moisture in the soil and from the surrounding air, and the cooling effect is much enhanced. This takes place most actively during the heated portion of the day when it is most needed.

A general purification of the air is not the least benefit to be derived from vegetation, as carbonic acid is absorbed and oxygen given out, just the reverse of what takes place in the animal economy. The purifying and cooling influence of trees placed uniformly through the city would have a marked influence on the public health in summer. The Tree Planting Association of New York has proven that various species of trees are adapted to our soil, and with a little care can be made to thrive. It seems, however, that in a matter that concerns not only the health but the beauty of the town, the city itself should be responsible for a uniform and continuous effort. If our thoroughfares were lined with shade trees, the summer heat would not be so intolerable and unhealthful. The construction of the underground road through upper Broadway will injure the life of the beautiful rows of trees now planted in that thoroughfare. It is much to be hoped that not only in the interests of beauty, but of public health as well, efficient steps may be taken to preserve the life of these trees. New York is bare enough without sacrificing any vegetation in a satisfactory state of growth.

With reference to the domicile, the proper efforts must be made in the line of extra cleanliness. Food of all kinds must be removed when the meal is ended and all decaying refuse be not allowed to accumulate. Sometimes by keeping rooms closed during the heat of the day, and thoroughly aired at night, a certain equalization of temperature will result.

With reference to individual hygiene much may be accomplished by a proper observance of the laws of health, especially with reference to eating and drinking. Doctors must especially protest against the indiscriminate use of alcoholic liquors during a prolonged hot spell. Eating to excess of nitrogenous food and rich and "made-up" dishes is also injurious. Overfatigue during the heat of the day should also be discouraged. The temperature of the body may often be satisfactorily lowered by a tepid bath, the effects of which will often remain longer than when a cold bath is used.

With reference to food, extra care must be taken that it is fresh, as a slight spoiling is most disastrous to the consumer. This is particularly true with reference to the universal food, cow's milk. It is estimated that there are 146,600 children under the age of three years in the boroughs of Manhattan and Bronx, or 6.72 per cent. of the whole population. This immense number subsists principally upon milk. Recent studies show that if cow's milk can be properly cooled it will keep a considerable time, and is much better than relying too largely upon superheating. Here is where the subject of ice comes properly under the physician's notice. Any difficulty in the free procuring of ice by the poor during the heated months, whether from a natural scarcity of this article or from a cornering of this staple by commercial greed, is a public calamity.

In 1896, during the heated term the death rate among little children rose to such an alarming state that the Board of Health requested the city authorities to distribute ice freely among the poor. This was done during the heated term, and doubtless resulted in a great saving of life. The streets were likewise flushed at this time.

A FEW PRACTICAL POINTS IN THE MANAGEMENT OF LABOR.*

By WM. J. G. DAWSON, M.D.,

Chairman of the Committee on Obstetrics, St. Helena, Cal.

When one has been a practitioner of medicine for thirty-three years, acting principally in the capacity of what is called "The Family Physician," he may not be considered egotistical if he refer largely to his own experience in this all-important branch of medical science—obstetrics and puerperal diseases.

While his method of practice may be similar in many respects to that of others it may vary sufficiently to make him somewhat like the "man with the fiddle," who usually likes his own the best. He has also had time to follow, in a measure, the scriptural injunction, "prove all things; hold fast that which is good."

Every branch of this old subject, which is like "the old, old story," ever new and interesting, has been written up extensively, and presented to this Society year after year by abler men than the one who now attmpts it; therefore, when the president honored me with the appointment of chairman of this committee, I was at a loss to determine what department of this vast subject would be most likely to call forth expressions of individual experience and practical results. Finally, I decided to call your attention briefly to some of the ordinary every-day duties of the obstetrician, under the heading of "A Few Practical Points in the Management of Labor."

It is not my purpose to present new theories, time is too short for that, but to advocate those well tried methods, which I believe experience has shown to produce the best results.

I will at once enter upon the subject by assuming that the case is a natural one, so far as position and presentation are concerned, but that the membranes have ruptured prematurely, and the case is a primipara. Of course, we usually expect a tedious state of affairs to follow; the os dilates slowly, as the hard head of the child has to do the work instead of the soft wedge-like action of the bag of waters, and sometimes a marked dryness with heat results, commonly called a dry birth. To relieve this condition I make a free application of fresh lard or vaseline, and in one case a lump of frozen tallow introduced into the vagina, helped me out wonderfully, and enabled me to apply forceps when I could not have succeeded otherwise.

Rigidity of the os is often accompanied or produced by the premature escape of the liquor amnii, but in multiparous cases is usually due to inflammatory action in the cervix, a past or present areolar hyperplasia, and sometimes to cicatricial hardness from former lacerations. As a remedy in these cases, I generally rely on the use of chloroform and warm vaginal douches. Chloral is also strongly recommended, but I do not think that it fulfils as many indications as the chloroform. I formerly was in the habit of smearing the os with extract of belladonna, but it is doubtful if it has any effect, except, perhaps, in spasmodic contractions of the cervix.

---

*Read before the Medical Society of the State of California, April, 1900.

In the use of anæsthetics, I prefer chloroform, believing it to be the safest and best. Unless in operative procedures, I use it in small doses administered during the pains to dull the sufferings.

We will now assume that dilatation of the os is complete, and the head has descended sufficiently to press well on the perineum. At this stage I apply freely, at intervals, plenty of vaseline, sometimes even if the natural secretion is not scanty. In addition, if the soft parts are particularly rigid, I push the chloroform for its relaxing effect, and am not in a hurry to terminate the labor, occasionally making slight resistance with the hand during the pains, until the soft parts become accustomed to the pressure, and an elasticity is developed to the fullest practical extent. As soon as the head makes its escape I feel for the cord. and if found around the neck slip it over the head. I then place one finger—generally the left index—into the child's mouth, and with the other hand support the head, which manipulation prevents the shoulder from bearing down on the perineum, and wait for the next pain to expel the body of the child. By the use of these means little more than the forchette is ruptured and the perineum generally left intact.

Is rupture of the perineum more frequent than formerly? If so, may not modern teaching have something to do with it? We are told that the attending physician must scrub his hands and arms with soap and water so many minutes by the watch, then wash them in alcohol, and then scrub with a solution of bichloride of mercury (1 to 1,000), also so many minutes; that the patient's pudendal hair should be clipped close, her body given a thorough wash with soap and water, the thighs and genitals scrubbed with a bichloride solution, patient dressed in aseptic clothing, and put into an aseptic bed; and yet with all these antiseptic and aseptic precautions, we are told that frequent examinations of the parturient patient are to be condemned, that vaginal examinations should be as infrequent as possible, some going so far as to claim that labor should be carried through with entirely external examinations. With such teaching is it any wonder that the inexperienced young practitioner sometimes finds, to his amazement, the child born while he is in an adjoining room, and on examination, that the perineum is ruptured, when, by carefully watching his patient, making the necessary careful examinations to keep himself thoroughly posted at every stage of progress, he might have saved his patient from unnecessary injury. While I believe in absolute cleanliness by any and every means at our command, this standing off with a forty foot pole method of delivery is, in my opinion, to be condemned. I find it necessary to make prolonged examinations after the os is fully dilated to aid in the delivery of the head, and to save the perineum and soft parts from being lacerated. While rupture of the perineum is sometimes inevitable, especially in primipara, its prevention depends much upon individual skill in management, I find that supporting the perineum with my hand—not too early, but at the right time determined by experience—the thumb applied to one side and the fingers to the other, pressing the head forward and upward in the direction of the pubes, answers every purpose, and in my opinion accomplishes more than trying to shell out the head or any other method.

While I generally deliver my patients in the dorsal decubitus, I am not in favor of restricting them to any one position. I have delivered women on their hands and knees, and they have said it was an easy position. There is no doubt that the left side position is a very suitable and convenient one, and the pressure on the perineum is not as great as when lying on the back.

It is also now taught that in every case of confinement it is advisable to examine the perineum by visual inspection. To this I object, as it is not necessary in every case. During my hospital life it was customary to uncover the patient and watch the progress of labor from beginning to end. This was not objected to by the class of women who frequent a public charity hospital to be confined, but in private practice it is very different, and I have made it a rule to expose my patients as little as possible, and only in cases of suspected perineal lacerations.

As soon as the child's head makes its escape, I have the nurse place her hand over the uterus and follow it down while the delivery is being completed, holding it there until I have attended to the child, cord, etc. I proceed to tie and separate the cord as soon as the child cries lustily, which is an indication that it is strong and vigorous. I do not wait until the pulsation of the cord ceases, as recommended by some, but in case the child is weak it may be well to wait awhile, or strip the cord toward the child before tying.

After attending to the child and seeing that it is covered properly and laid in a safe place, I relieve the nurse for a time to ascertain the condition of the uterus and placenta. I gently knead the uterus with one hand until it is firmly contracted. I do not wait any specified time for the delivery of the placenta, for, as Dewees says: "Time, simply considered, can never form a safe rule for the delivery of the placenta; the degree of contraction of the uterus alone can point out the proper moment to operate or teach us when it would be improper to attempt it." I never use Crede's method of expression, except, perhaps, in a modified form, but when I decide that it is time to act, I always deliver the placenta by a *vis a fronte.*

I cleanse my hands, smear them with a lubricant, introduce one or fingers into the vagina along the upper surface of the cord, pressing it backwards, and with the other hand make gentle traction until the placenta is expelled. Traction on the cord, with me, has never caused the formation of a vacuum, alluded to by authors. I twist the membranes into a rope so as to remove them intact, but the chance of a portion being torn off and retained is said to be greater when the method of expression has been adopted.

Adherent placenta is rare, but in a few instances I have had to introduce my whole hand into the uterus and remove it. After the delivery of the placenta I replace my hand over the uterus, again relieving the nurse, who now removes the soiled bed clothing, etc., and carefully washes the patient. All this time my hand never relaxes its hold on the uterus, until it is firmly contracted and reduced to as small a compass as possible. The continual pressure upon the uterus I use as a preventive of post-partum hemorrhage. It promotes a firmly contracted uterus, empties the cavity of clots, and to some extent at least, prevents after pains.

When everything is clean about the patient, I then apply the binder, a wide piece of muslin pulled well down over the hips, which prevents its slipping up, and under it, directly over the uterus, I place a pad, which I allow to remain for 12 to 24 hours as a further protection against hemorrhage. I have never seen retroversion produced by the pad, and as to the binder, if for no better reason, it is a great comfort to the patient.

I seldom use ergot, never while there is anything in the uterus, but occasionally administer a dose at the completion of labor, as an additional precaution against hemorrhage.

In regard to the use of forceps, it is unfortunate that such a wide difference of opinion should exist. The ultra conservative old teachers advised that these instruments should not be used "until the living powers of the whole body are greatly reduced, if not irrevocably exhausted, one of the symptoms being continued cessations of the labor pains for several hours at the end of the third or fourth day;" while those radicals like Dr. Edward S. Dunster and others advocate "the more frequent use of the forceps in the second stage of labor; even in cases where there is no doubt that, sooner or later, the child will be expelled, if no assistance is rendered." I think the two extremes should be avoided, and more common sense in addition to individual experience manifested in their use. There is one point, however, to which I wish to refer. I am in the habit, where circumstances will permit, of removing the forceps before the complete delivery of the child's head. I bring the head well down until it forcibly distends the perineum, then carefully remove the instrument and allow nature to terminate the labor. Over thirty years ago, while house physician in the Charity Hospital, New York, I first saw a patient delivered in this way by Prof. Isaac E. Taylor. This method was also advised by Madame LaChapelle and others, and when I have adopted it I have been more than satisfied with the result, as the perineum is less liable to rupture if time be allowed for it to stretch.

In conclusion, I might say that as we grow older in the profession we naturally become more conservative. I was reminded of this by the statement of Dr. Lusk in his work on obstetrics, that "episiotomy is essentially the operation of young practitioners, the occasion for its employment diminishing in frequency with increasing experience." One thing is certain, that the physician should never hasten labor to save his own time or convenience, but always act with an eye single to the welfare of mother and child.—*Pacific Medical Journal.*

LATENT GONORRHEA IN THE MALE AS A FACTOR IN DISEASES OF THE FEMALE ORGANS OF GENERATION.*

By LEWIS WHEAT, M.D., Richmond, Va.

Professor of Diseases of the Genito-Urinary Organs and Syphilis in the University College of Medicine.

That gonorrhea plays an important part in the diseases of the female organs of generation is now almost universally conceded. The extent to which it may remain latent in the male when apparently cured and the frequency with which the female is infected under such circumstances is still, however, a matter of dispute. I believe it to be a source of frequent infection; and my object to-night in reading this paper is not so much to tell you something new, as to refresh your memories and induce you to impress your patients with the necessity for more careful treatment of the disease.

There is no malady that has been more grossly exaggerated on the one hand, and underestimated on the other, than gonorrhea. The vast majority of the cases are, and remain, especially when properly treated, a simple local disease, readily cured in both male and female; while a few tax to the utmost our skill and patience in their treatment, and through systemic infection, often in spite of our best efforts, become a horrible disease, causing intense suffering and frequently ending in irremediable deformity or death. There is, too, an intermediate class, in whom the disease seems to lie ever dormant. It is, apparently, cured readily enough, but as readily breaks out again. I suppose that every one of you has some old stand-by, who is sure to turn up once in six months with a case of clap. It is this class in whom the disease seems to be latent, giving no evidence of its existence for months, or as long as the patient conducts himself properly. It is certain to break out, however, upon any debauch in venery or dissipation. There is another class, very much rarer. Those whose religious character is at stake, and who have transgressed but once, and who, through shame and mortification, secretly treat themselves, or allow their disease to wear itself out—these are most dangerous from our present point of view. This class marry with the germs still lurking in the crypts and follicles of the urethral mucous membrane, and the recesses of the prostate and vesicula seminales, their long presence having established a toleration. These are almost certain to infect their wives. [This statement is supported by the report of a typical case.]

One reason for writing this article is to call attention to the fact that gonorrhea in the female is rarely discovered until irretrievable damage has been done, and to suggest that if we accept the teachings of Noeggerath, Tait, Price and other eminent gynecologists, as we must do at least in part, as confirmed by our own experience, it is our duty to impress upon our patients the serious consequences that may follow an attack of gonorrhea, and the necessity, if they wish to escape the serious consequences that so often follow gonorrhea in women, for its early recognition and prompt treatment if their wives are infected. This is the more important, as the disease in women rarely presents the clinical features we would expect, and is seldom recognized as venereal in its origin. How many cases of gonorrhea in women have any of us been called upon to treat as such? I can only recall three, outside of children who were infected by their nurses. Lydston, of Chicago, in his valuable work just issued, says: "If the more advanced views be correct, the correlations of gonorrhea and gleet in the male are too frequently regarded as simple and non-venereal in the female. It is a striking clinical fact that gonorrheal inflammation in the female rarely presents conditions physically analogous to those observed in the male. Vaginitis of venereal origin is exceptional, and urethritis, the only real analogue, is excessively rare in women, and, moreover, does not always occur when virulent vaginitis exists." While the disease, as we have seen, may be as mild or even less troublesome in women than in men, the loss of her sexual organs and untold agony can often only be prevented by the early recognition of the disease and its prompt treatment. If recognized sufficiently early, I believe that gonorrhea is more certainly and easily cured in women than in men. "The researches of modern operative gynecologists are developing most astonishing facts. The more carefully we study pelvic diseases in women, the narrower their etiologic field becomes; the more frequently they are found dependent upon gonorrhea. Thus, when freed from pathologic and anatomic errors, pelvic inflammations are found to be dependent, in the majority of cases, if not all, upon tubal disease, and tubal disease is unquestionably almost always due to gonorrhea and its congeners or derivatives." (Lydston.)

---

* Abstract of paper read before the Richmond Academy of Medicine and Surgery, February 27, 1900.

Noeggerath, applying the dictum of Ricord that in 1,000 men 800 have had gonorrhea, says: "I do not believe that I exaggerate when I say that gonorrhea in 90 per cent. of cases remains uncured. Of every 100 women who have married men formerly affected by gonorrhea, hardly ten remain well; the others are afflicted by some of the ailments that I have attempted to describe." I know from my own experience that this is an exaggeration. The young men of Paris, New York and Chicago may be so fortunate, but it is not the case in Virginia. I know that I have treated many patients who have married, and are the fathers of many children, without infecting their wives. And I believe that when treatment is instituted sufficiently early and properly, and thoroughly carried out, clap is as completely eradicated as any other disease. It is the pernicious custom of treating the disease as a slight ailment of no consequence, and the fact that almost every drug store in the country is a clap shop, that produces the evil. I recognize the fact, however, that while the gynecologist is liable to err on his side, I am liable to err on my side. He sees the infected wives, and I see the men only, and in many instances lose sight of them after marriage. Yet, when I did a general practice I treated many cases of gonorrhea and afterward delivered their wives, and I am sure that a majority of them have never had any trouble that could by any possibility be attributed to gonorrhea. While the case I have detailed is one of many, all are by no means so fortunate. The literature of the last ten years teems with the reports of cases in which infection has been followed by metritis, endometritis, salpingitis, pyosalpinx, ovaritis, cystitis, urethritis, pyelitis, peritonitis, acute pyæmia and death. [Here follows the report of a case which shows how rapidly general systemic infection may follow the disease when acquired from a man who thought that he was cured, and in whose disease the gonococci played a very small part.]

In the past twelve months I have seen three cases of suppurating appendicitis in young men suffering with acute gonorrhea. I very foolishly failed to have the pus examined, and so cannot say whether it was due to gonorrhea or not. From my own experience in systematic infection from gonorrhea, and the many reported cases, I believe it to be extremely probable. In such cases as the last related by me, no treatment can prevent their being dangerous as foci of infection for years, and, I believe, as long as they live. But an experience rather larger than usual leads me to believe that if physicians and patients would realize the serious nature of the disease, and institute proper treatment at once, the disease could be eradicated and prevented from becoming latent. When, however, it is allowed to run on with improper treatment, or none at all, for weeks, or even months, Dr. Price is justified in saying that it never gets well, and remains as a source of infection as long as the sufferer lives.

Discussion.—Dr. J. S. Wellford remarked that when Noeggerath first stated his views of the effect of gonorrhea in the husband on the wife, he thought them very extravagant; but subsequent information had, to a great degree, established their accuracy. Indeed, in this respect and others, he thought that in a healthy subject he would prefer to treat a case of syphilis than one of gonorrhea, as in a person easily managed the complications and sequelæ were frequently not so serious. When gonorrhea in the female was confined to the vagina, the treatment was comparatively easy; but he would request Dr. Wheat to give an outline of what he regarded as best when the uterus, ovaries and tubes were involved.

Dr. Stuart McGuire stated that so far as he could remember he had recognized in his practice but one case of acute gonorrhea in a woman. Doubtless, many individuals suffering from the disease had consulted him, and had been advised to use some antiseptic douche for supposed leucorrhea. When these patients came to him it was usually in the late stage of the disease, when its results or sequelæ were the indications for surgical intervention. In the future he would give this class of cases more careful attention, and his treatment would be determined by microscopic examination of the discharges.

Dr. Hugh M. Taylor said that in his experience the majority of pelvic troubles were due more to septic parturition than to gonorrhea; and that these troubles were as usual to-day as in the pre-aseptic era.

He did not allude to the gross but to the minor infection, which was more common than we were led to suppose.

Dr. W. W. Dunn said that where urethritis accompanied vaginitis it was well, besides using permanganate douches, to keep the vaginal walls separated by an aseptic packing that would absorb the discharge.

Dr. Wheat, in concluding the discussion, said that, as gonococci frequently remained latent for years in the posterior uretha, it was exceedingly difficult to tell at what time marriage was safe. To determine this, he advised injections of nitrate of silver solution, which would stir up the old inflammation if present. The number of women consulting him for gonorrhea, in proportion to men, was small; in fact, vaginitis or urethritis in women was very uncommon, even in prostitutes. If recognized, it was only after it had attacked the tubes, or, more rarely, the uterine mucosa. The germs might remain latent in the vagina, even through successive pregnancies, and then take on new life. This, he believed, solved Dr. Taylor's problem as to the minor conditions in the parturient state. Lydston stated that the normal germs of the vagina, by a species of evolution, might produce gonorrhea in the male urethra. Dr. Wheat said that rarely or never had he seen a virulent case of gonorrhea in the male that was uninfected by streptococci, and that the joints of gonorrheal patients took on septic trouble more readily than when infected by any other malady, except tuberculosis. He thought the best treatment was that which advocated thorough scouring of the cervix, followed by its dilatation; scouring the uterus, curetting it, washing out with bichloride of mercury, solution 1-2,000, and packing with iodoform or moist bichloride gauze, distending it as much as possible. After these procedures the vagina was thoroughly scoured and lightly packed.—*Richmond Journal of Practice.*

ON THE THERAPEUTIC ACTION OF CYSTOGEN.

By CLARENCE L. LEWIS, M.D.

Many are conversant with the uses of formaldehyde externally as an antiseptic and germicide; but we have never dwelt upon its physiological effect when given internally. As formaldehyde itself is very irritating to the mucosæ, we are forced for reasons well apparent to forego its use in solution and resort to its only non-irritating salt—hexamethylen-tetramin, or, as it is known in this country, "cystogen."

It is a well authenticated fact that, if inhaled, formaldehyde will appear in the urine. This fact was brought to my attention in a very striking manner in a conversation I had with the city physician of Savannah, Ga. The substance of his story follows:

"A few years ago I was engaged in the disinfection of Savannah, using formaldehyde as my disinfectant, and in the course of my duties secured the service of an assistant. This young man had suffered for months from an aggravated attack of phosphaturia which had inflamed his bladder and rendered him extremely uncomfortable. In the course of his duties he inhaled considerable formaldehyde, and a few days afterward he came to me and said: 'Doctor, I find that my urine is clearing and that it does not irritate my bladder as it used to do. I do not understand the cause of this change, as I have taken no medicine whatever.' I told him candidly I did not understand the cause of his relief, nor did I know until I learned afterward that formaldehyde appeared in the urine after inhaling its fumes and that it possessed the power of dissolving phosphates and urates when used in this manner." It is evident to my mind that this young man inhaled enough formaldehyde to impart its characteristic germicidal and solvent properties to the urine. It is further my belief that uric acid and urates can be dissolved in the blood and urine in the same manner. As this mode of introducing formaldehyde into the circulation is not feasible, we shall take up the study of its chemical salt, cystogen, and note its physiological action. Cystogen ($C_6H_{12}N_4$) is a white crystalline salt of a sweetish, pungent taste and is quite soluble in water. It should be administered in doses of five grains, three to six times daily, preferably after meals and should be dissolved in half a glass of water. I suggest this mode of administration as it is slightly irritating to the empty stomach. Yet it may be given in this way for months without impairing the digestion or affecting the stomach in any way. Fifteen minutes after ingestion, free formaldehyde can be detected in the urine through its chemical reaction with bromine water. In half an hour after ingestion, the fumes of formaldehyde are quite apparent in the urine, which when voided at this time (I think I am justified in stating) is a diluted solution of formaldehyde with all of its characteristic properties. Examination of this specimen will show that a small fraction of cystogen has been liberated as free formaldehyde and that the major portion appears in the urine unchanged. Such a specimen can be kept for months perfectly clear and sweet, provided the blood temperature is maintained. It is the unchanged portion of cystogen in the voided specimen that yields formaldehyde at the blood temperature and preserves it indefinitely.

Nicolaiar, of Berlin, in an article written some years since, testified to the fact that formaldehyde, when used to preserve a specimen of urine, dissolved the uric acid and urates in the bottom of the test tubes; and held them in solution even when acids were added. This fact in connection with its property of dissolving the phosphates and its world known germicidal action is taken advantage of in its administration, and we will take up in routine its clinical uses in such cases. "Cystitis" is characterized in a large number of cases by an ammoniacal decomposition of urise, which is the chief cause of the inflammation of the bladder and the discomfort to the patient. The arrest of this decomposition tends largely to cure the case. In fact, in cases of old gentlemen with enlarged prostate, or in cases of chronic cystitis with phosphaturia or other complications the chief cause of trouble is this ammoniacal urine and the cure may be effected by agents which prevent this decomposition. In my estimation, no agent that we have to-day acts as effectually in preventing the decomposition of urine in the kidneys, ureters and bladder as this salt of formaldehyde, and in those cases characterized by ammoniacal urine, I believe we have a specific. There is really no necessity of irrigating the bladder in these cases when cystogen is used, except in those cases where there is a large amount of blood and pus to deal with. As formaldehyde is a very irritating substance, care should be taken not to give an overdose, as it will render urine irritating and tend to defeat the end desired. Practically the same conditions obtain in cases of phosphaturia, pyo-nephrosis, nephritic and cystic calculi (phosphatic) and similar conditions, which readily yield in like manner to the use of this agent.

Before leaving this subject I wish to inform you of the rationale of the action of cystogen in the above class of cases. Some time since, experiments made at the Massachusetts General Hospital in Boston and at the Johns Hopkins Hospital, Baltimore, Md., prove conclusively that enough formaldehyde is liberated in the urine to destroy the bacillus typhosus. Certainly, if this is the case, the bacillus that produces the ammoniacal decomposition of urine is destroyed, and the consequent fermentation is prevented. Innumerable clinical records demonstrate conclusively that not only is the ammoniacal fermentation arrested by the internal administration of cystogen in these cases, but the formation of pus is controlled throughout the genito-urinary tract by the germicidal urine (containing formaldehyde) and irritating deposits of urates and phosphates are prevented or redissolved. Thus the irritating properties of putrid, foul-smelling and turbid urine disappear and such urine becomes clear, fresh and aseptic, simply through the germicidal action of this agent.

In the bodily ailments of humanity a few agents will be found responsible in a large majority of instances. We have long known the tubercular bacillus to be responsible for the largest number of deaths and closely following in the footsteps of the former we find a poison generated in the economy itself. This poison is uric acid and we have for some time been conversant with a long chain of symptoms that are due directly to this product of incomplete combustion in the tissues. Doubtless in time we will discover other obscure diseases to be due to its subtle influence. When we speak of uric acid conditions we mean conditions dependent upon an excess of uric acid in the blood and tissues, thereby producing characteristic symptoms of poisoning. Thus we may have a deposition of the uric acid salts in the joints and tissues; then again the deposition may take place in the pelvis of the kidney or in the urinary bladder. The first condition we term gouty and rheumatic affections; the second condition we term calculus and is found in those suffering from renal colic and renal or cystic calculi. Then again we have conditions in which the blood becomes surcharged with uric acid, producing intense headaches, or what is known as uric acid storms. Instead of the aforesaid we may have convulsions and unconsciousness. Then again the pneumogastric nerve may become involved and the condition known as asthma be produced. Furthermore, I believe uric acid poisoning has a large part in the causation of the epileptic status. Thus do we find that uric acid has much to answer for in the summation; and that, necessarily, agents directed towards its removal must stand foremost in the treatment of such cases. I was told by an acquaintance not long since of a very interesting and somewhat puzzling occurrence that happened in the course of his investigation. It seems that he had a very fine kidney specimen which contained a calculus of some size, and learning that formaldehyde was a fine preserving agent concluded to test its efficacy. Two years afterwards, on examining this specimen, much to his surprise and chagrin, he found the calculus had almost disappeared. In conversing with me the only explanation that he could conceive for the reduction of the size of the calculus was the effect of formaldehyde upon it. Some years ago a chemist of distinction discovered that when formaldehyde was used to preserve specimens of urine over night it redissolved the uric acid and urates that had been precipitated in the bottom of the test tubes, and that the subsequent addition of acids did not affect their solvency, thereby proving formaldehyde to be the only agent that held uric acid in solution in acid urine. This incident led to the discovery of hexamethylen-tetramin, or, as it is known in America, "cystogen," which evolves small quantities of formaldehyde at the blood temperature. Subsequent experiments with this salt of formaldehyde have proven its great utility in the long train of symptoms incident to the uric acid poison. Reports from all parts of the country, but especially from Hot Springs, Ark., indicate that cystogen is destined to replace all anti-rheumatic and uri-solvent drugs.

WHY I USE PEPTO-MANGAN "GUDE"—AN EXPERIMENTAL DEMONSTRATION.*

By WM. KRAUSS, PH.G., M.D., Memphis,

Director of the Microscopic Laboratories, Memphis Medical College; Pathologist and Visiting Physician to St. Joseph's Hospital, etc., etc.

Some five years ago I wrote a paper for the *Memphis Medical Monthly*, giving a résumé of the evolution of the iron compounds, and appended a report of cases giving blood counts, etc. The manufacturers of the preparation I preferred saw fit to reproduce the case reports in their pamphlets, but said nothing about the reasons that induced me to prefer their product.

At a recent joint meeting of physicians and pharmacists I was criticised for opposing the use of ready-made compounds, while still advocating the use of Pepto-Mangan "Gude," which is a proprietary preparation. I hesitated considerably about bringing the matter up again, because I dislike to build up a reputation as an endorser, *and have never in any other instance written an article endorsing a proprietary preparation.*

---

* Read before the Memphis Medical Society.

I hope, however, to show you this evening that there is no pharmacopœial preparation that meets the requirements of an ideal iron compound, and, until this is found, I intend to continue to use what has never disappointed me, and is not based upon mere faith. The work of Bunge is too well known to be now quoted, and I will only make a few experiments before you this evening and show the reasons for the faith that is in me. There may be other proprietary iron compounds, and doubtless there are, that will come up to the same requirements, but I see no advantage in swapping the devil for the witch.

It is not necessary to repeat all the tests with all the official iron preparations, because they are divisible into groups, all the salts of one group behaving very much alike toward the gastric and intestinal juices.

An ingenious theory recently put forward regarding the action of the mineral salts of iron is that they decompose the substances in the intestinal tract which precipitate the food iron so that it may be absorbed. This is the only rational explanation of the fact that we do occasionally get results from them. On the other hand, it is far more rational to use an iron compound that can be and is absorbed, for then we are reckoning with known quantities, instead of blundering along, giving more iron at a dose than is contained in the entire body, and incidentally deranging the digestive functions by precipitating the gastric, pancreatic and intestinal juices, and producing constipation by reason of the very astringent nature of some of the iron salts.

Beginning with the organic double salts, of which the scale salts are representatives, we notice upon the addition of this gastric juice, that a precipitate is formed; the double salt is decomposed and ferric salt remains, which is insoluble, both in gastric and intestinal juice.

The tincture of ferric chlorid will precipitate some of the gastric constitutents, though most of the iron will remain in solution in the hydrochloric acid; the iron still in solution will not be absorbed, because its non-diffusibility is taken advantage of in the manufacture of dialyzed iron, the acid passing through the animal membrane; when the iron finally reaches the intestine, the alkalin carbonates promptly precipitate it. Ferrous sulfate behaves similarly. In both instances, as you see, the very insoluble ferric oxid is finally formed. If you have ever tried to remove iron stains from your water pitcher, you have some idea how insoluble it is.

The insoluble compounds, like reduced iron, or Vallet's mass, only serve to render inert the arsenic with which they are usually prescribed; if dissolved at all in the stomach, they are re-precipitated in the intestine.

Taking now Gude's preparation, we find it soluble, not only in all these reagents, but also in a mixture of them. Potassium ferrocyanid readily gives the iron reaction, excess of ammonia will separate it, redissolving the manganese, which is then recognized by the color of its sulfid; the alkalin copper solution gives the reaction for pepton, showing that it is what the label says. It mixes with arsenious acid, forming a perfect solution, thus giving us a most useful hematopoietic agent. The soluble alkaloids are perfectly soluble in it, as is also mercuric chlorid. Being a pepton, it is readily diffusible by osmosis.

The only disturbing agent in the intestinal tract is hydrogen sulfid; this will precipitate it, but presumably, much of the iron must have been absorbed before it encounters this gas; if not, appropriate agents should be used for its elimination.

Therapeutically, it does not nauseate, constipate, discolor the teeth, precipitate the digestive agents, nor become inert from contact with them. As to the clinical results, I need not add anything to the many reports already on record.

210 to 220 Randolph Building.

IMPORTANCE OF ACCURATE PRIMARY AND CONSECUTIVE EXAMINATIONS AFTER FRACTURE.

By THOMAS H. MANLY, M.D.,
Visiting Surgeon to Harlem Hospital, New York.

For many reasons it is highly important that one make as complete an examination as possible at the first examination of the patient's general condition as well as the local state of the parts. This is particularly incumbent on the practitioner who is first called in to see the case; for in a considerable number of bad smashes after the examination and a temporary adjustment of the limb, the case forthwith passes out of his hands into a hospital or under the care of a surgeon.

Even should the case continue under his own care by this primary examination he is enabled to determine the extent of damage done, and provide such materials as frequent manipulation and dressings will require, and be able to properly foreshadow the future outlook of the case.

It is true that in many cases a thorough examination immediately after injury may be quite impossible. The injury may have been sustained in severe, frosty weather, when the mangled parts must be promptly covered up and protected. There may be no facilities for properly dressing the parts, nor attendant to assist; and often, which is worse, our patient may be in such shock or collapse as will not permit of any protracted examination. Very much depends on this examination and the measures temporarily employed, and hence, though the difficulties in the way are frequently very great, one must avail himself of the opportunity at the time to grasp the true character of the injury and accordingly prepare himself to deal with such a condition as a proper inspection will often forecast.

DO ANIMALS FEEL PAIN LESS THAN MEN?

What we call an "ear for music" is almost an added sense in some people as compared with others. Even in animals of relatively high intelligence, such as dogs and monkeys, there seems to be reason to think that their perception of pain is much less acute than in humans. After serious operations under chloroform they are often frisking about a few minutes after recovering consciousness, and even jumping from the floor on to the operating-table in a way that forbids the notion that they are in suffering. In all animals the skin is possibly less sensitive than the human skin. It is covered with insensitive hair, and though no doubt more sensitive than any other part of the body, it is presumably on quite a different plane of sensitiveness from the human skin. In human beings the sensitiveness of the internal organs is very small compared to that of the skin. Examples of this are familiar to every one. While in health no one knows anything of his "inside"; he has no sensation from it. Even disease of a very serious kind can and often does go on for years in the internal organs without causing any sensation. The nerves of the internal organs are much more concerned with regulating functions and controlling the size of the blood-vessels than with the conveyance of sensory impressions to the brain. Life would, in fact, be unbearable if the functions of animal life in a normal state caused sensation; and they would cause it if the organs were richly supplied with sensory nerves. Every surgeon knows, for example, that the human intestine is, when its muscular coat is at rest, almost as insensitive as the hair or nails. In the operation of opening the intestine, often required in the presence of malignant disease, the cut in the skin and the business of fixing the gut to the skin would be very painful, and deep anesthesia is required. Two days later, when the gut in its new position has to be opened, the patient is told to shut his eyes, and he feels nothing; he does not even wince while a knife wound, nearly two inches long is made in the intestinal wall with either knife or hot iron. This has been proved by hundreds of cases, and certainly it is not to be explained as due to stoicism on the part of the patient. Other important operations have been done without anesthesia, except for the skin cut, and without giving rise to suffering at all of a severe kind. It is most improbable that even the highest of the lower animals would feel pain where man feels none. On the contrary, from their smaller brain development they probably are less sensitive than man.—*Edinburgh Review.*

"RE BOTTINI'S OPERATION."

HOW SOON SHOULD THE OPERATION BE REPEATED IF THE RESULT OF THE FIRST OPERATION WAS NOT SATISFACTORY?—This question certainly is of very great importance. To answer it definitely is impossible at the present time, owing to lack of sufficient experience. Then, too, there are individual differences that have to be considered in each case. Of course, if, as just stated, the first cauterization of the gland produced continuous, painful vesical spasms, accompanied by inability of the patient to empty the viscus sufficiently, a second operation should be soon performed. The unceasing and undiminishing suffering of the patient will here have to be the guide. Thus it became necessary for me to repeat the operation in my Cases VII and XX, eighteen and twenty-nine days, respectively, after the first interference. In Case XXI, in which I thought I should have to do a prompt instrumental revision, I could temporize on account of the steady improvement that set in on the eighth day after the operation.

On the other hand, if the suffering of the patient be not the immediate cause for a second operation, if the amount of residual urine still present is the only indication, the decision as to when to repeat the operation is far more difficult. Many patients will be perfectly satisfied as soon as the frequent painful spasms at the neck of the bladder are relieved, and will not care about the residual urine, no matter how large the amount may be. And that Bottini's operation can remove these pains, and permanently, is absolutely certain. The proposition to repeat the operation at a later time will, therefore, often meet with opposition on the part of the patient. He naturally shrinks from going through a second operation as long as the former ever-present pain no longer constitutes a *causa movens*.

In patients with large fibrous prostates in whom the first operation did not effect the entire removal of residual urine, we should not be, it seems to me, too hasty in repeating the operation. I have seen a case, that of a man seventy-one years of age, a pronounced diabetic (eight per cent.), getting decidedly worse after the third operation when the second had brought great improvement. I have mentioned that, if we make our incision to correspond to the difference in length between the normal urethra and that of the given case, as explained fully in the foregoing pages, we may hope to help our patients at once. If it be found that an incision longer than 4 cm. be necessary, while the instrument at hand permits only of cutting 4 cm., the surgeon had better temporize. The case just referred to has made a very strong impression upon me, so that I would venture to give warning to my colleagues, although my experience is based on one case only. In this instance the prostate was extremely hard, and did not yield a bit to pressure. At present the patient passes but a small amount of water voluntarily during the day. However, all his many pains and annoyances prior to the Bottini operations have been overcome by catheterizing himself twice in twenty-four hours. He now lives a comparatively comfortable life. Catheterization, which had been practised for seven years, is much easier than it was ever before. Of course, had I made my incision sufficiently long at once, and had I burned the posterior groove twice in succession, the result might have been entirely different.

RECURRENCE.—It is, no doubt, too early to say much about this question. Bottini claims not to have seen a single recurrence in all of his more than eighty cases. As stated in my former article, it is to be regretted that he never gave a careful synopsis of his experience. Nobody, therefore, can blame the man who shakes his head when reading that, even in pre-antiseptic times, this operator never met with any complications in his patients. Nor will it be taken amiss if he should express his doubts as to the correctness of the statement that a recurrence was never seen. It certainly would seem necessary to have reports on re-examination at a later period.

In my eleven cases which belonged to the category of "so far cured," I have seen but one case in which at present the trouble has returned to some degree, and which now is about as it was a short time before the operation, at least as far as frequency of micturition is concerned. This patient (Case XI), however, was operated upon at the time when I still used the original small battery, which did not enable me to read the strength of the current from an amperemeter during the operation. I therefore cannot claim that the four cuts were made with the same strength of the current throughout. In fact, I rather incline to the belief that this was not so, for the reason that this is the only one of my cases, so far observed, in which the trouble has reappeared to some extent. I have, of course, advised the patient to undergo a second operation. He, however, refused to have it done, being satisfied with his present condition. In this respect also, Freudenberg's latest article is of particular importance, for he, too, has carefully traced his cases. In eleven out of the twelve selected cases published by him—of which six were operated upon once, three twice, and two three times on account of a previously insufficient result—the cure obtained by the last operation, that established perfect vesical drainage, is reported by him to be still lasting and unchanged. In five of these the operation was done as long as thirty-one, twenty-six, twenty-two, twenty, and sixteen months; in the other six it was done less than a year since. In the twelfth case the result of the operation was negative, the retention not having been overcome. Thus the foregoing shows that in the oldest case, *i. e.*, the one in which the operation dates back furthest, the perfect condition primarily brought about by Bottini's operation has so far continued absolutely unchanged for over two and one-half years. I personally can prove the lasting effect of the operation in my patients, who were primarily cured of all their subjective and objective symptoms—in one only the vesical catarrh did not entirely disappear—twenty-two, twenty-four, and twenty-five months after the operation (Cases V, VI and VII).

The Advantages to Be Derived from Bottini's Operation Aside from its Main Purpose, *i. e.*, the restoration of vesical drainage are: (*a*) The disappearance of the vesical spasms; *(b)* cure of the generally present chronic constipation; *(c)* improvement in general condition, as shown by increase in weight.

a. As I have stated in a former article, Bottini's operation seems to me to take the same place in regard to the spasmodic contraction of the sphincter-vesicæ muscle, as forcible stretching or division of the sphincter-ani muscle takes in connection with anal fissure. The muscle is divided in two or three places and therewith comes to rest. Furthermore, the three-fold division of the glandular tissue interferes with the former blood supply of the gland, and thereby prevents the intermittent "congestion" (Guyon), the cause of the recurrent attacks of cystitis and acute retention.

b. It is interesting to observe how almost invariably the chronic constipation these patients so frequently suffer from disappears after Bottini's operation, even though the latter has been but partially successful. This is probably attributable to an improvement in the nervous condition of the patients. For with the cessation of the former continuous spasms at the vesical neck, the irritability of the nerves supplying the lower sigmoid and rectum will also disappear, and thus the normal function be restored.

c. Another striking feature observed in connection with Bottini's operation is, that in nearly every instance the patients gain in weight, and that even in cases in which the obstruction to the proper flow of urine has been but partially or not at all overcome. Every one of my patients illustrates this point. It is explained, I believe, by the fact that these poor sufferers, who sometimes for ten or fifteen years have not known what a fair night's rest means, are again able to sleep five or six, sometimes eight to ten hours in a stretch. Their nervous system at once recuperates, and this naturally reacts upon all other functions. Freudenberg has paid considerable attention to this interesting phenomenon, and proves his observations by figures. Thus, one of his patients, in whom the operation was performed twice but the functional results remained *nil*, wrote him that everybody considered that he looked younger by ten years, and that he had gained thirty pounds within about two years.

WHAT CONSTITUTES A CURE AFTER BOTTINI'S OPERATION?—The three factors that, in my opinion, would determine an ideal cure of a prostatic are:

(a) Removal of the obstruction to the outflow of the urine; in other words the complete elimination of residual urine, or reduction of the same to an insignificant amount; *(b)* return to normal frequency of micturition; *(c)* disappearance of vesical catarrh.

As regards *a*, the mechanical effect of the operation, of course, must remain the decisive factor. So long as the obstruction is not satisfactorily removed, the surgeon has no right to consider his patient cured. However, it should be remembered that it is more or less within his power to accomplish this result by repeating the operation, or, if need be, doing it a third time. The patients' demands are not, as a rule, very exacting. So long as they have been relieved of their former continuous suffering, they consider themselves cured, even though there still be a residual urine of 250-300 c.c. (eight to ten ounces). From a scientific standpoint, such a definition of the meaning of a cure is, of course, untenable.

With regard to point *b*, the re-establishment of normal frequency of micturition, this evidently depends upon the success or failure of the surgeon in removing the residual urine and the vesical catarrh or pyelitis. In proportion to the degree to which one or the other or both of these factors have been overcome, will the frequency of micturition be reduced. To give any exact figures as to what constitutes "normal frequency" would be impossible, since this must depend largely upon the total quantity of urine passed within twenty-four hours. A diabetic, for example, or a man with a contracted kidney will probably urinate twice or three times as often as one not so afflicted, although the residual urine may have been removed in the latter as well as in the former.

Now, as regards the vesical catarrh, this disappears in exceptional instances as a direct result of the operation, *i. e.*, as soon as the obstruction to the proper outflow of the urine has been removed. In other cases careful after-treatment is imperative. The administration of the different drugs so often mentioned in the course of this paper, aided by local irrigation—best with increasing doses of nitrate of silver—will often clear up a patient's urine that has been turbid for years. Nevertheless we should not be surprised if our efforts in this direction are not always crowned by success, even if pyelitis be absent. Whoever has looked through the cystoscope into the trabecular bladder of a prostatic, with its larger and smaller acquired diverticula, its numerous and deep grooves between and behind the protruding bundles of the detrusor muscle, will understand the difficulty, nay, impossibility, in some instances, of curing an infectious catarrh that has once been thoroughly grafted upon such a surface. However, it has been my experience that patients in whom the urine remained more or less turbid after Bottini's operation are not, as a rule, in the least disturbed by this condition. They have no pain; they are well able to retain their urine when the natural call comes; they have no tenesmus. If they did not see their urine, they would not know that they had a catarrh; in other words, if the catarrh should disappear, this would cause no difference to them as far as their feeling is concerned. I personally have observed the entire disappearance of all turbidity in the urine in five of my cases. In these the urine cleared up by itself after the removal of the obstruction, without any further vesical irrigation, the patients merely having continued taking salol and urotropin internally. In none of the remaining cases, however, was I able to carry out a suitable after-treatment. All of them left my immediate supervision three to four weeks after the operation.

Indications for Bottini's Operation.—I have purposely reserved the discussion of this question because it is by far the most important of all.

The principal decision the surgeon is called upon to render in the case of a patient with hypertrophy of the prostate who needs radical relief is: Which of the many operations in vogue for this affection is indicated?

Simultaneous ligation of the internal iliac arteries—a procedure which certainly belongs to the radical operations, in my estimation—has been abandoned on account of the severity of the interference in old patients, and the possible complications arising.

Castration, an operation which has brought permanent relief to many prostatics, is losing ground owing to the objections offered by the patients, many of whom have heard that there are other means at our disposal, nowadays, to help them. It also seems inadvisable to propose the operation, because quite a number of patients thus treated have become mentally affected.

Ligation of the vasa deferentia (including resection of the spermatic nerves—angioneurectomy) has received a severe blow by the compilation of cases from Mikulicz's clinic, in 1897, by which, as will be remembered, it was found that even in cases with, at first, favorable result, the old trouble recurred at about the end of the first year. In my former two articles I expressed the opinion that the preliminary performance of vasectomy might be a rational procedure in order to reduce the hyperæmia of the prostate gland. In my twenty-four cases I have worked upon this basis in two instances, but must confess that I have not been particularly impressed by this method; at least I have no proof that it has been of value. In the second patient treated in this way (Case XIX), in which I left a permanent catheter in the urethra for five days, a suppurative funiculitis set in, which it was very interesting to see stopped short at the point of ligation and division of the vas deferens. Here the suppuration following gave me a good deal of trouble during the after-treatment, inasmuch as it took almost half a year before the sinus definitely closed. I am, therefore, rather inclined now not to let this interference precede Bottini's operation.

Prostatectomy, suprapubic or perineal, will, I believe, at the present time be advisable only in cases of large, fibrous prostates, provided the patients are not too far in the seventies and seem able to stand an operation under general anæsthesia.

It is interesting to note the marked divergence of opinion with regard to the value of Bottini's operation in patients with a fibrous prostate. Morton, of Brooklyn, when publishing his five cases of hypertrophy of the prostate treated by Bottini's operation, expressed the view that only fibrous prostates were amenable to improvement or cure by the said method. Also, a renowned American surgeon, after much reflection on this subject, wrote me the other day that it was his belief that hard prostates only could be relieved by Bottini's operation. On the other hand, I personally have seen the most beautiful results in those patients in whom the glandular enlargement preponderated, and had less success when operating on patients with a hard gland. A similar divergence of opinion as to the effect of Bottini's operation still exists in regard to the significance of the amount of residual urine. Lohnstein in a résumé covering the experience of many operators claimed that the best results are obtained in cases of absolute retention, while I personally have had more success in cases with incomplete retention. Thus it will be seen that the class of cases that were most successful in the hands of one operator proved less so in the hands of another—a circumstance that, in my opinion, speaks well for the operation, since it demonstrates that *each* type of prostatic enlargement, with its varying clinical symptoms, has shown good results in the hands of *some* operator. Of course, this may be perhaps, to some extent, explained by the fact that no two cases of prostatic enlargement are exactly alike. Further experience of individual operators is absolutely necessary, before it will be possible definitely to settle the points here under consideration.

The question, when Bottini's operation shall be done, I would to-day answer in the same way as I did eighteen months ago: namely, as soon as it will become necessary to give the catheter into the hands *of the patient himself*. As I have said in my previous paper on this subject, the danger to life begins at this period. A single mistake in regard to asepsis may set up an incurable cystitis with pyelitis or pyelonephritis. That the surgeon will be able to avoid these complications by doing Bottini's operation on a patient with a hitherto uninfected urinary system can, of course, not be guaranteed. Yet if the work was properly carried out, under the most scrupulous asepsis, I do not think it likely that the complications mentioned should set in.

I do not share the view expressed by various authors, that Bottini's operation is absolutely contraindicated in the presence of a pyelitis. Among my twenty-four cases there certainly were at least two in which a marked degree of uni- or bi-lateral pyelitis was present. Both patients stood the operation very nicely, the one being absolutely cured, the other much improved. Nevertheless it is certainly necessary to make it plain to the relatives, if not to the patient himself, how greatly the risk is enhanced in the presence of pyelitis.

That Bottini's operation is a safe and harmless procedure, as might be inferred from the original publications of the author of the operation, will no longer be claimed by any one, in view of the experience of operators all over the world. It will have its deaths, if done in more or less advanced cases, the same as every other operation so far devised for prostatic enlargement has had. However, it should be remembered that a comparative compilation of the cases of the various authors up to date shows Bottini's operation to have had the lowest mortality, while at the same time it shows the greatest percentage of cures. And I believe we shall be able to decrease considerably even the present low rate of mortality, by making use of the experience we have meanwhile acquired, and by advising an early operation, that is to say, as soon as unmistakable clinical symptoms have appeared. Whenever the doctor finds the premonitory symptoms of prostatic enlargement slowly developing, he should insist upon a distinct diagnosis of the trouble. At this stage, too, the diagnosis can be made with absolute certainty with the aid of the cystoscope. If that well-known groove at the internal urethral fold at the neck of the bladder is seen during cystoscopy; if, furthermore, there are symptoms of a beginning trabecular bladder, in cases in which the catheter repeatedly finds a small amount of residual urine, the diagnosis, according to my belief, is definitely established. These cases, as Freudenberg so well says, are not yet ripe for the incisor. Nevertheless, from a prophylactic point of view it would be well for the patients if the indication for radical treatment even at this early date could be established. I refer to the use of Bottini's prostatic cauterizator.

As is known, Freudenberg has also, within the last year, improved the original cauterizator of Bottini with reference to aseptic principles. It can now be boiled the same as the incisor, and is a reliable instrument. It shows two platinum blades, resting on a porcelain plate, at the concavity of the junction of shank and beak, which can be brought to red or white heat by the electric current.[1] If these blades are pressed against the projecting prostate at the neck of the bladder, a slight or stronger effect can be produced, according (*a*) to the amount of pressure used, (*b*) to the amount of heat applied, and (*c*) to the length of time the cauterization is made. It will be readily seen that a great amount of prostatic tissue can thus be burnt away right at the neck of the bladder and the prostatic bar just appearing lowered down to the base of the bladder. It is further evident that such a surface cauterization does not share the certain amount of risk attached to the interference with Bottini's incisor. The only complication, the operation otherwise being aseptically carried out, might be hemorrhage at the time when the eschars are cast off, and this can here be more easily coped with than when occurring after the ordinary Bottini operation. According to the author, one must not be surprised to see improvement begin as late as at the end of the third or fourth week, in some instances. However, even if future exprience should prove the aforegoing assumption to be correct, it is more than questionable whether doctors will be ready to propose such an operation to prostatics in the early stage of the disease, and whether the patients will accept such advice. I fancy that time is far distant; perhaps it will never come. Yet I am inclined to believe, with Freudenberg, that such an early cauterization of the beginning prostatic enlargement would have to be looked upon as an operation void of all danger, which bids fair to save the patients thus afflicted all the untold suffering that is otherwise bound to come sooner or later.—*Medical Record.*

---

[1] The improved instrument was demonstrated by me before the Section on Surgery of the New York Academy of Medicine, December 11, 1899. See *Medical Record*, December 30, 1899.

PROGRESSIVE PERNICIOUS ANAEMIA AND MALIGNANT DISEASE OF THE STOMACH.

By ALBERT ABRAMS, M.D., San Francisco.

In the cases of pernicious anæmia counterfeiting carcinoma of the stomach, culled from the medical literature, I can find no instance in which simulation has been more marked than in the two cases which have been made the subject of this contribution.

Case I.—A man aged forty-three years, referred by Dr. W. Barrett, of Redwood City. The patient for more than a year has grown progressively weak. He suffers from dyspnœa, palpitation of the heart, and gastric irritability. He has lost twenty pounds in weight. The status præsens in brief is as follows: Marked pallor; malleolar œdema; hæmic murmurs at the cardiac base and in the cervical veins; slight evening exacerbations of temperature. The stomach contents, after an experimental meal of Leube, shows the absence of hydrochloric acid and the presence of large quantities of lactic acid. Palpation reveals marked tenderness in the region of the pylorus, and percussion easily demonstrates ventricular dilatation. The glands of the neck and inguinal region are slightly enlarged. In this patient a pulmonary lesion was suspected, and in the absence of palpable physical evidence he was submitted to a Roentgen-ray examination. The rays demonstrated a dark patch in the apex of the right lung. The question naturally arose whether in this patient I was dealing with the anæmia of the pretuberculous stage of phthisis, a condition of the blood which I have designated elsewhere as pulmonary anæmia.[1] Pulmonary is distinguished from all other forms of anæmia, the one exception being pernicious anæmia, by the fact that while the ferruginous preparations benefit pure anæmics, in pulmonary anæmia they are practically of no value, or at any rate the benefit accruing from their use is only evanescent. The pathognomic sign of pulmonary anæmia is the therapeutic test. If a suspected individual is subjected to a single pneumatic treatment, employing inhalations of compressed air, one invariably finds, after an examination of the blood, an increase in the percentage of hæmoglobin. A collective investigation made by me, in a number of patients demonstrated that the hæmoglobin percentage could be increased fifteen per cent., on an average, after a single pneumatic-cabinet exercise. This test proved negative in my patient.

Case II.—A woman aged seventy-four years, seen in consultation with Drs. von Hoffman, Thorne, De Vecchi, and Aronstein of this city. The symptoms were similar to those in the previous patient, excepting that there were more pronounced emaciation and gastric irritability. Vomiting in the incipiency of the disease was of daily occurrence, and repeated examinations of the vomitus invariably demonstrated the absence of hydrochloric acid and the presence of lactic acid. One of us detected the presence of an intumescence in the pyloric region, while all concurred in the demonstration of increased sensitiveness and resistance in that area. Pronounced cachexia was present, but there was not the characteristic yellow-lemon tint of pernicious anæmia. The foregoing anamneses were decidedly suggestive of malignant disease of the stomach, and would, in the prehæmatological era of medicine, be accepted as conclusive clinical evidence of its existence.

---

[1] *Medicine*, December, 1895, and *The Medical Standard*, January, 1900.

The following differential table, taken from the excellent text-book of Anders on the "Practice of Medicine," suggests the conventional evidence employed in differentiating obscure gastric carcinoma from progressive pernicious anæmia:

Pernicious Anæmia.	*Gastric Carcinoma.*
Red corpuscle count falls to, or below, 1,000,000 per c.mm.	Count does not fall to 1,000,000, as a rule.
Found earlier in life.	Occurs after middle life.
Gastric symptoms not pronounced.	Gastric symptoms more suggestive.
Lemon-tinted skin common.	Skin pale, muddy, or jaundiced.
Adipose tissue fairly preserved.	Progressive emaciation.
No glandular enlargement.	Supraclavicular or inguinal glands enlarged.
No physical signs over stomach.	Increased area of resistance over stomach.
Castric contents after test meal negative.	Deficiency or absence of hydrochloric and presence of lactic acid.
Some improvement may be brought about, even cure, though rarely.	Condition becomes steadily worse until death ends the case.

To the foregoing table the dictum of Osler may be added: "In carcinoma of the stomach, the condition is an anæmia with wasting, and the layer of panniculus is not retained as in the ordinary forms of pernicious anæmia."

Hæmatology has won so many triumphs in modern medicine that no clinical examination may be regarded as complete without a methodical blood examination. Cabot, in his monograph on the blood, gives expression to the following epigrams: "Malignant disease may bring down the blood count to 1,000,000 or lower, but in such cases leucocytosis is always present"; on another page: "In pernicious anæmia, the leucocyte count is very low and may fall below 1,000 cells per cubic millimetre." A few years ago, the preceding statements would have been regarded as the utterances of a doctrinaire, yet now clinicians everywhere accept them as truisms.

In the first patient, the blood count showed 1,000,000 erythrocytes with a hæmoglobin percentage of 40, or a color index of 2. The leucocyte count was reduced to one-third the normal. In the second patient, besides the presence of normo- and megaloblasts, the red cells were reduced to 800,000 per cubic millimetre, the hæmoglobin to thirty-five per cent., and the leucocytes to one-half the normal number.

Both patients were placed on increasing doses of Fowler's solution and bone marrow. The latter had to be discontinued at once owing to the gastric irritability which it provoked. The therapeutic test with arsenic only confirmed the evidence of the blood examination (marked reduction in red corpuscles, leucopenia, and high color index), and the improvement in both patients was immediate and progressive. The first patient returned to his work as a laborer, and when I last saw him he said, "I can work harder than I have for years." He took twenty drops of Fowler's solution three times a day for two weeks, and the number of his red corpuscles at the end of that time increased to 500,000 above the normal. The same marked improvement, though not so rapid, was noted in the second patient, and hydrochloric acid reappeared in the stomach contents.

The following conclusions may be formulated:

1. Arsenic is a true specific in pernicious anæmia, and is as certain in its immediate results as is mercury in syphilis, quinine in malaria, or iron in chlorosis. The specificity of arsenic is so great that in no case of grave anæmia are we justified in excluding the progressive pernicious variety, even though the blood examination is negative, without a heroic trial of arsenic. Like the other specifics, it produces relative cures and cannot be regarded as a prophylactic owing to the frequent relapses which occur. It may be given as Fowler's solution, beginning with three-minim doses well diluted after each meal, and increased by one or two minims daily according to the urgency of the case, until twenty-five or thirty minims are taken three times a day. A safer rule is to push it to the point of toleration and maintain it at this point until the blood examination shows the result desired. The appearance of its physiological effects (œdema and itching of the eyelids, gastro-intestinal irritation, etc.) is a signal for its temporary discontinuance. When arsenic cannot be given by the stomach, it may be administered subcutaneously or even by the rectum.

2. In association with arsenic, assimilable food and rest are indispensable adjuvants.

3. The use of intestinal antiseptics in this as well as in other diseases is a mere therapeutic refinement not sanctioned by bacteriological reasons, and they ought, therefore, not to be employed as a routine measure. In the Italian literature one finds some authentic evidence of the good effects from thymol, its administration being suggested by the theory that pernicious anæmia is caused by intestinal absorption of products which are destructive to the red blood corpuscles.

4. Iron is not only useless but is apt to create digestive disturbances.

5. Bone-marrow is said to be curative, but in my experience it induces nausea and aggravates existing gastro-intestinal troubles.

6. Gastric disturbances suggest stomach lavage. The character of the food ingested must be determined by the results of a chemical analysis of the stomach contents.

7. To counteract the great reduction in the quantity of blood (oligæmia) weak saline solutions may be given by the colon (enteroclysis) or preferably in the subcutaneous tissue (hypodermoclysis).

8. Relapses are best prevented by minute attention to dietetic and hygienic details.

784 Geary street.

EXAMINATION AND TREATMENT OF ULCERATION OF THE ABDOMINAL RECTUM AND SIGMOID FLEXURE, WITH COMPARISON OF OLD AND MODERN METHODS.*

By STERLING B. TAYLOR, M.S.,

Professor of Anatomy, Ohio Medical University; Rectal Surgeon to Woman's Hospital.

The choice of this subject was made purposely to contrast the modern methods of examination and treatment of disease found in the abdominal rectum and sigmoid flexure with methods that prevailed as late as the early nineties in the practice of some rectal specialists, and still prevail in the practice of others who stand high in the eyes of men who have never seen the newer methods demonstrated. In the language of our friend, C. F. Hoover, of Cleveland, "Seeing is no longer believing, but understanding."

The specialist referred to in previous statement as practicing the old way, at the beginning of the present decade, is none other than C. B. Kelsey, of New York, and with his kind permission we quote the following from remarks made by him at his clinic held at Post-Graduate School, New York, June 27, 1891, in giving clinical history of two cases of "Ulcerative Disease of Upper Rectum and Sigmoid Flexure."

He said: "We are here in the presence of disease of just that part of the alimentary canal which is most difficult to examine, the upper part of the rectum and the lower part of the sigmoid flexure—of that part which can neither be reached from the rectum below nor by the hand from the abdomen above." He further states to make a differential diagnosis "We must try and get the disease in reach of the finger, and for this purpose we will etherize the patient and pass the hand into the rectum." Further along he tells his class that with the hand in the rectum and pressing from above with the other hand, until they come together, no growth being felt between them, that he is still dissatisfied. In this connection he says: "Even this is not positively conclusive, for you can conceive of a small ring of cancerous deposit, an inch or so in width, being pushed to one side in advance of the fingers in the rectum and allowing the two hands to come in contact to one side or in front of it without its being detected." Kelsey admits that it is dangerous to explore the rectum with the whole hand, and to those who need to be convinced that it is fallacious to believe that the finger is the all-necessary for a satisfactory examination of the upper rectum, we desire to respectfully refer them to Kelsey's article in the *New York Medical Journal*, June 27, 1891, and to our paper on Obstipation, published in the *Columbus Medical Journal*, November 20, 1899, and to another paper, published October 20, 1899, in the same journal.

For fear that it might escape our mind, it is justice to Kelsey to state that he is now using a proctoscope devised by himself for high exploration of the rectum. The methods taught by Allingham a score of years ago are in general practice by many men in this country, with varying results. It has been only a few months since the writer heard a noted specialist lay stress on the efficacy and safety of digital examination.

---

*Read by request before Muskingum Valley Medical Society, February 8, 1900.

It should be borne in mind that there are two well-known anatomical facts that would prevent a satisfactory examination of the "upper rectum" by the finger, and these may be set forth in the one statement, "The length of the rectum is nearly three times that of the finger," to say nothing of the hinderances to the use of the full limit. One of the best instances of being unable to make a differential diagnosis with the finger alone was one that came to our notice January 5. Mrs. B., referred by Dr. D. T. Gilliam for an examination and treatment if practicable. As is our custom, we placed her in an accelerated Sims position, and made preliminary examination with the finger, discovering an enormous amount of ulceration and the existence of a stricture of the abdominal rectum. We were unable to form a correct idea of character of ulceration and extent of stricture, which we believed to be present, but placing her at ease in the Martin posture, and by using a short proctoscope, we had sufficient view of the field to determine the ulceration to be of a specific nature and the stricture of the abdominal rectum to be one of small caliber extending into the sigmoid.

Since the results of a thorough digital examination have been found to be of such doubtful benefit, let us now discover what will be shown in an examination with the speculæ in ordinary use and with the aid of an anesthetic.

Everyone present knows that it would be futile to try to make an examination with an ordinary speculum without an anesthetic.

First, you must dilate the external sphincter fully, before beginning to explore the rectum, or, as it should be called, the first chamber of the rectum, the vestibule as it were. No perfectly satisfactory examination can possibly be made of more than this surface, and if ulceration is the suspected condition you may not even then find it in this easily accessible field. The walls of the rectum, if it is empty, lie in folds, presenting a rugose appearance, and as your instrument opens, some of the folds fall into the opening, obstructing a view that should be uninterrupted. The ulcer may be small and escape being noticed by being hidden in a fold of membrane. The fact that only this chamber of the rectum is available for exposure with a speculum such as is in ordinary use, even under an anesthetic, is borne out from personal experience and the experience of Martin, Pennington, and a man whom you all know as a surgeon of ability, Dr. J. F. Baldwin.

In discussion of the paper on Obstipation, already mentioned, Dr. Baldwin informed the Academy that in the case of Mr. L., who consulted him some time in August, presenting symptoms of obstipation, that he examined the patient's rectum under an anesthetic, using successively the finger and speculum, but found no mechanical obstruction. The examination was not satisfactory, since he presented "classic" symptoms of valvular obstruction. On our return to the city, the patient was referred to us by Dr. Baldwin to be examined with the proctoscope. Such examination was made without the aid of an anesthetic, entirely painless, and at the upper border of the first chamber of the rectum there was found an enormously hypertrophied rectal valve. Passing this and looking into second chamber, there appeared a hypertrophic rectitis, with second hypertrophied valve in view on the right, beyond which was found the third chamber with dilatation more marked, third and fourth valves in sight showing hypertrophy. Going beyond these the lower sigmoid was exposed to view and found to be dilated to twice its normal size, this condition being induced by the pathological condition of the rectal valves, which offered a close mechanical obstruction.

Another case that carried conviction with it same into my practice some two months ago, coming from the hands of one of our most successful physicians. Mr. K., salesman, aged about forty-five years, gave history of having consulted his family physician some two years ago and was by him examined thoroughly by the old methods, but the surgeon was unable to discover the cause of the constant discharge from the rectum, and gave him little treatment, telling Mr. K. that it was a catarrhal condition. The cause remained to be discovered by the newer method. We placed him on our chair, and after preliminary examination used the short proctoscope, finding valves in normal position, but slightly hypertrophied. Using the long proctoscope and passing all valves, looking into the lower portion of the sigmoid, which was slightly dilated, we were able to make a diagnosis of hypertrophic membranous proctitis and sigmoiditis. There was no pain at first or subsequent examinations. We have seen this man three times a week since coming under our observation; he has steadily improved under treatment which will be outlined later, membranous débris all gone, dilatation greatly decreased, general health much improved, and the discharge seldom noticeable.

These three cases may be taken as a fair example of the insufficiency of the old methods. As to the cause of Mr. K.'s condition, we are sure that even the slightly hypertrophied valves offered sufficient obstructive power to hold in abeyance enough fecal matter to produce irritation and dilatation of the gut above. However, two more cases may strengthen the argument.

Mr. V. K., aged about fifty years, presented himself to Dr. J. F. B. with symptoms of long-standing obstipation. He was examined by the ordinary methods, but with negative result. Proctoscopic examination revealed slight proctitis, hypertrophied rectal valves, with a very considerable degree of dilatation above the valves.

Another case was that of a physician, examined January 15, for obstructive constipation. The newer method revealed a tortuous rectum, with four hypertrophied valves, making diagnosis of obstipation absolutely certain.

The older methods of examination, as cited by Baldwin in discussion of a paper on Obstipation, would have revealed nothing of diagnostic import, and yet with the proper instruments and position, and without any pain, it was possible to explore the entire rectum, ballooning having taken place promptly.

Dr. E. H., through whose advice the physician had consulted us, was present at the examination, and expressed himself as well satisfied with the results of modern proctoscopy.

Those of you who saw demonstrations here to-day may recall the facility with which the entire rectum was brought into view, and remember comparisons made by those present.

Diagnosis of internal fistula is made easier by placing the patient in Martin's posture and using the anoscope or short proctoscope. The field is clear, no rugose condition, the bowel is dilated by atmospheric pressure, thus enabling you to examine with the eye the entire gut wall. There is ample room in the proctoscope for manipulation of the probe, hypodermic, and bistoury, if needed. The anoscope is of great service in locating, diagnosing, and treating disease below the second chamber, nor does the use of the anoscope, proctoscope and sigmoidscope end in the diagnosis and treatment of disease, since they are of inestimable value in the discovery and removal of foreign bodies.

All here know from experience that the Matthews, Kelsey, Allingham and other make of speculi allow the bowel to fall in folds, presenting a wrinkled surface, taking much time of the operator and his assistants in twisting speculum, probing, and disarranging folds so as to explore the entire field. As occasionally happens, after spending an hour or more, his labors have been futile, the small ulcer which perchance is being sought for has been successfully hidden by a small fold of membrane. This is highly mortifying to the surgeon, to say the least.

It was our lot some two years ago to search diligently under the old plan, patient being anesthetized, for just such a condition. We failed to find seat of trouble, but at a later date stumbled on an ulcer about two lines in diameter. At this examination there was a hemorrhage that assisted us in locating it. With the newer method, no anesthetic employed, the gut wall is smooth and can be inspected at a glance. The former method of diagnosis of such cases depended on the finger, with logical arrangement of symptoms, with occasional use of some of the rectal speculi in general use. Much has been written on the subject of disease and it is a rare thing to note any new symptoms that can be depended on, but all will confess that there will eternally be something new in the aid of diagnosis and treatment. The proctoscope is to the general surgeon what the microscope is to the physician and general surgeon.

The general practitioner is the man who first sees these cases of ulceration of the rectum and sigmoid, and he has found from long experience that there is nothing in constitutional treatment that will act as a panacea. Nor is there such a thing in the hands of the proctologist, and yet do we very correctly claim that the majority of these cases can be cured before they have reached that stage where the more external coats of the gut have become involved, resulting in a constriction of more or less gravity.

Every case of dysentery must be regarded with suspicion, and the patient should be kept under the observation of the family physician for years. If not, he should be warned by the physician, in the event of his being unable to call him, to consult some physician of repute at the slightest sign that there was to be a return of dysentery, or any indication of catarrhal ulceration of the gut, and inform the physician so consulted of previous attack. It is a well-known fact that chronic dysentery, like gonorrhea, is apt to produce stricture. Unlike the latter, however, this result is not noticeable so soon after the ulceration, but it is evidenced years afterwards. We are led to believe from experience and general reading that strictures following dysentery are cured by imperfect cicatrization. Many of us have seen these imperfect cicatrices, and noticed their tendency to contract and shorten the distance between two given points. It is true that years are often consumed in this narrowing process, and such is the case in this condition. One authority places the danger period at seven years, but we would place it at almost thrice that number. It is not to be inferred that dysentery is responsible for all ulcerative process in the rectum and sigmoid flexure. Far from it, but it may be enumerated among the general causes. Other productive causes are foreign bodies, constipation, obstipation, diarrhea, tuberculosis, syphilis, polypi, hypertrophied valves, and malformed rectum.

Sigmoidal and rectal ulceration makes itself known to the general practitioner by aching in the sacral region of the patient, and over left iliac fossa, aching down the thighs, difficulty in defecation, either too free or insufficient, or such conditions existing alternately. When insufficient, small pieces of mucous and membranous débris may be seen clinging to the fecal column, the mucous sometimes tinged with blood. As a rule, the external sphincter is easily relaxed and the lower rectal chamber may be explored by an improvised proctoscope examination. When this is done, it will be found to be hot and dry, with occasional spots of mucous. This class of patients generally present a morning temperature below normal, and an afternoon temperature of 99°, but rarely going over 100° F. There is a loss of flesh, accompanied by pallor, of a greenish yellow tinge which might be best described as chlorotic. There is also loss of ambition and interest in public or domestic affairs, and lethargy and melancholia are attending symptoms. To sum up, inflammation, dilatation, and ulceration of sigmoid flexure and rectum present three subjective signs, which are usually all present, though some one may be absent.

First. Aching in sacral region, more marked after movement of bowels.

Second. Pain over course of left spermatic chord, worse before defecation.

Third. Aching down the thighs.

Other concomitant symptoms under this heading is the stoppage of gas at a certain point, probably due to an angulation in gut produced by excessive dilatation, a discharge of muco-purulent matter, or possibly sanious in character per anum. Other patients may tell you that after voiding an enema they notice débris in bottom of vessel, which on close examination is found to be mucous, pus or membranous casts.

In the treatment of the disease under consideration by the former method, much pain was given the patient, unless an anesthetic was employed, and frequently then time was wasted and a partially successful treatment resulted, to say nothing of the after discomfort of the patient who had taken ether or chloroform. Such unnecessary adjuncts as the long rectal tube and Wale's bougie were employed to convey medicated enemas to upper rectum and sigmoid. Matthews, of Louisville, commends highly, in a discussion of this subject, the use of hydrastics, one-half ounce to four ounces of water, to be thrown into the sigmoid flexure and retained, conveying this through the bougie, and claiming that the majority of cases may be cured in two weeks. In the more severe forms of ulceration he employed enemas of boracic acid, saturated solution, one drachm to eight ounces of sterile water for ten days, this treatment usually being attended with success; finally employing iodoform emulsion in large quantities of sweet oil. We object seriously to the bougie as an agent of application. We believe that in the hands of most men less skilled than our friend of Kentucky the use of this instrument is painful and dangerous. Other authorities of equal standing agree with him in the recommendation of enemas containing such drugs as carbolic acid, nitrate of silver, and the less toxic campho-phenique.

Treatment by enemas exclusively or in connection with medicine per oram may prove a necessity in a very small minority of such cases, ascites, acute hypertrophic proctitis, stricture, enlarged prostate gland, an enlarged retroflexed uterus, or anything that would tend to occlude the lumen of the gut and preventing free ballooning would preclude the use of the spray or powder blower. If possible the cause should be ascertained and removed, whether it be errors in diet, polypus, or hypertrophied rectal valves. If it be a case requiring constitutional treatment, the patient should be referred back to the family physician for the needed treatment. The ratio of non-ballooning rectums is about one in eighty, and yet there are a certain number that balloon very slowly, and this process must be facilitated by gentle and intelligent manipulation. Ballooning being accomplished, the field under the eye, the ulcer or ulcers should be cleansed with a suitable spray, then dusted with a stimulating or antiseptic powder. A mixture of bismuth, calomel, starch, and Dover's powder we think is a logical and highly beneficial dressing powder, and is easy of application with the aid of a retainer, a long tube, and a supply of compressed air, the long stem or tube of the retainer being passed through the proctoscope, changing the position of the latter so as to place a thin coating over the entire surface. Any suitable powder may be employed in this way. If ulceration is extensive, a spray or swabbing with some of the following well-known solutions is of benefit: Black wash, glyco-thymoline, nitrate of silver, 3 to 5 gr. to the ounce, or saturated solution of boracic acid. In conjunction with this, evening enemata of Aquenous Golden Seal, 1 oz. to 4 oz., thrown into rectum with an ordinary fountain syringe, short nozzle.

Position, as pointed out by Martin, has much to do with the success of the treatment of these conditions. The lateral recumbent posture is to be advised, as this position lessens hemorrhoidal congestion. The bowels should be kept loose with a saline, and it is our custom to prescribe a draught of Apenta water mornings. The practice of giving salines in pelvic disorders is well established, and has proven very beneficient in acute, subacute, or chronic colitis or proctitis. The diet should exclude starches and all articles of food which tend to produce an undue amount of gas during the process of digestion, or anything that will result in a hard, compact stool.

PITHY, PUNGENT AND POINTED PARAGRAPHS,

REPRINTED FOR THE PERUSAL OF PHYSICIANS WHOSE
PARTICULAR PENCHANT IS PERTINENT PROSE.

A CASE OF FATAL SPHENOIDAL SUPPURATION.—Samuel Lodge, in the *Laryngoscope* for March, 1900, describes the case of a man 31 years of age who was admitted to the Royal Halifax Infirmary, May 15, 1899. At that time he complained of constant pain in the right ear and the right side of the face, which had existed for six months. For the last two months the right side of the face had been swollen, and there had been a copious discharge of pus, often mixed with blood, from the right nostril. The temperature was 100°. The ears were quite normal. No pus was found in the antrum of Highmore. An alkaline wash was prescribed for the nose. The patient continued to improve for about ten days, when there was an evening rigor and the temperature rose to 102.6°. A few days later the patient became comatose and died.

Upon opening the skull the base of the brain was found bathed in thick pus, extending as far forward as the pituitary body and backward over the pons and medulla. The cribiform plate of the ethmoid and the cells were normal. There was necrosis of the walls of the sphenoidal sinus, and a probe readily passed from the base of the skull through this sinus into the nose. The sinus was full of thick muco-pus.

SPONTANEOUS RUPTURE OF THE UTERUS.—Bradford Woodbridge, in the April 7 issue of the *Medical News*, reports a case of this rare accident, which has been said by Etheridge to occur about once in every 4,000 labor cases. The woman was the mother of one child, and when the reporter was summoned she believed her confinement to have been due about a week. There were pains, but these were so slight that the patient doubted their significance, and examination showed no dilation of the os. During her period the woman had been exceptionally well. In the previous labor the attending physician had resorted to the use of forceps. This birth was thought to have been a little premature, owing to the mother receiving a blow on the abdomen a few days before.

Three hours after examination she went into collapse. The fetal protuberances of the abdomen were no longer visible, and pressure gave a "boggy" feel. The fetal heart-beat could not be heard, and the diagnosis of "accidental concealed hemorrhage" was made. The collapse was not overcome by stimulants, and the patient died thirty hours after the onset of the trouble. Upon opening the abdomen two hours later a thick layer of clotted blood was found between the abdominal wall and the uterus. Across this organ was an irregular transverse tear, through which the left shoulder and hand of the child protruded into the abdominal cavity, the rest of its body being firmly grasped by the contracted uterine muscle.

CONTINUOUS USE OF DIGITALIS IN HEART TROUBLES.—J. Groedel, in the *Practitioner* for April, 1900, says that cardiac insufficiency is an inevitable result of advancing heart changes. Compensation is established in most cases of valvular disease and may last for months or years, but if the patient lives there is sure to come a time in which heart failure is more or less pronounced. In those cases he recommends continual administration of digitalis, and advises that we should not wait until signs of want of compensation develop, such as dropsy, anemia, and tachycardia. He recommends that the digitalis be given in doses of from eight to ten grains, once each week. At such wide intervals the drug has no cumulative effect, but during its administration the quantity of urine should be carefully determined, and if it is not augmented the drug should be withdrawn. In the great majority of cases the digitalis is well borne by the patient, and the charge which is made that the drug causes a loss of strength and increases the weakness of the patient is unfounded, these changes occurring as a result of the disease for which the drug is given, and not of the drug itself. He is convinced that where fatty degeneration is markedly benefited by digitalis there is sometimes a subjective cure of these cases.

HOT AIR IN CHRONIC RHEUMATISM.—T. L. Satterthwaite recently read a paper before the New York Academy of Medicine on this subject, an abstract of which appears in the *Medical News* of April 14, 1900. He says that the application of superheated air was originally suggested in medicine by Turkish baths. A patient in a simple warm chamber rebreathes the products of his own respiration. In a Turkish bath the temperature cannot be raised above 170° F.; in the hot air, parts of the body can be subjected to a temperature of 400°. The main idea in the apparatus so far devised for giving the hot-air treatment has been to keep the skin dry while the air is heated all around the limb or part of the body that is to be subjected to the high temperature. For this purpose, when the temperature to be borne is not very high, the part is simply covered with a Turkish towel. When temperatures above 300° F. are to be employed, the part must be carefully wrapped and no spaces allowed to exist between the cloth and the skin; otherwise the perspiration at these points will become so heated as to scald the patient. Machines properly constructed should be so lined with asbestos that the patient may not come in contact with the heated metal. Glycosuria is not a contraindication for the hot-air bath, but in anemia, fatty degeneration, and arterial sclerosis it may be dangerous. The rise of pulse and temperature, and a certain tendency to increase of blood-pressure, would seem to make it unadvisable to use it in such cases.

When a limb is subjected to hot-air treatment, there is first a lessening and then an increase in the circulation of the skin, with the injection of the peripheral capillaries and a sense of warmth. The pulse gradually rises until it is from ten to twenty-five beats higher than it was when the treatment began. There is a rise of temperature of from one to five degrees. There is usually an increase of respiration up to twenty-two or twenty-four per minute. A general sense of comfort comes over the patient and continues as long as the treatment is doing good. After a time, which is variable in different patients, a nervous depression supervenes, which should not be allowed to continue. As a rule the treatment should stop just short of this, and then it will have its maximum effect.

Transient Real Blindness in Hysteria.—G. C. Harlan, in the *Journal of Nervous and Mental Disease* for April, 1900, discusses a very interesting case which contributes not a little to solving the relations between hysteria and amblyopia. The patient was 23 years of age, and at the time of coming under observation complained of a loss of vision in the left eye of three days' duration. The right eye had full vision and was normal in all respects; in the left vision was reduced to the perception of fingers at four inches. The ophthalmoscopic appearances were normal, with the exception of a slight retinal hyperemia. Various forms of confusion tests failed to elicit any higher degree of vision than was at first admitted. There was decided inversion of the blue and red fields. Three days later there was complete monocular blindness. The v. Weltz test, which consists of watching the behavior of the eyes behind a prism, seemed conclusive that vision was absolutely lost in the left eye. The patient was directed to look toward a flame, and a prism based toward the temple was placed above each eye alternately. When it was held before the blind eye there was no movement, whether the other was closed or open, but when it was placed before the right eye there was very evident deviation of both eyes to the left, and recovery after the prism was removed. The writer believes that this test is absolute, as the turning of the eye for fixation is a matter over which the subject has no control. About ten days later the patient was again seen, when she announced joyfully that vision had returned in the left eye, and it was ascertained that she was able to read LXX Snellen at twenty feet. The case especially interested the reporter, as it seemed to be a typical hysteria, and he was quite satisfied that the eye was absolutely blind. It interested him particularly because with a considerable experience with cases of this kind he has only found one other in which the blindness was real; he usually succeeds in making the patient read with the blind eye

A Fatal Case of Constipation.—Robert Brummitt, in the *Australasian Medical Gazette* of March 20, 1900, reports an exceedingly interesting case in which we are by no means assured that death was due to the constipation, but certainly it was the most striking symptom in the case. The patient was a boy 16 years of age, who had suffered from obstinate constipation from birth. Laxatives of all kinds gave only passing results, and during childhood sluggishness of the bowels continued, in spite of constant care. At four years of age some external hemorrhoids were found, but there was no rectal abnormality revealed by digital examination. Almost every laxative and intestinal tonic was used as the years passed. Massage was employed, but nothing gave relief. When the condition was aggravated, a large injection of soap and water was given, which washed out the bowel. Without active interference there was never a spontaneous movement. During childhood the patient was frail and ill-nourished. When he was 15 years old his weight was ninety-seven pounds. In March, 1899, there was an attack of abdominal pain; an injection containing turpentine gave prompt relief. At this time he passed under homeopathic treatment, and was not seen again for six or seven weeks. He was then found to be in great distress, not having voided feces for a month. Temporary relief was obtained by passing a long tube beyond the sigmoid flexure and injecting soap and water. At this time the abdomen was somewhat distended, and very striking vermicular movements of the intestines were noted during the attacks of pain. These contractions were marked by undulations which moved over the abdominal surface, beginning in the left inguinal region, passing slowly to the right of the umbilicus, and then turning to the left, over the course of the transverse colon. These movements were at first only occasional, but they increased in frequency and were always accompanied by acute pain and considerable noise, often audible in the next room. Diligent efforts were made to empty the colon, the abdomen being kneaded and rubbed in the direction of the large intestine, and copious injections were used, those composed of olive oil giving the least pain. This treatment was combined with the application of the faradic current to the abdomen, but without benefit. In July, 1899, there was a slight evening rise of temperature, the patient had a tender abdomen, and the undulations were less frequent. Death ensued four days later, the apparent exciting cause being peritonitis.

At the post-mortem examination, made twelve hours after death, the abdomen was found much distended, its walls being devoid of fat, and the muscular layers extremely thin. When the abdomen was opened, coils of small intestine presented, which had a diameter of from two and one-half to three inches, and were filled with air. These coils hid the ascending colon from view. The intestine over it was very red and covered with recently formed lymph. The lower part of the ileum was almost full of semi-solid matter; others were empty and flaccid. The ascending colon was found to be full of hard feces, as was the cæcal pouch. The transverse colon was full of scybalous masses. The walls of the colon were very much thicker than normal, and the contents of the large intestine and ileum weighed three and a quarter pounds. The mucous lining of the cæcum and upper portions of the colon was deep red. There were two ulcers in the posterior part of the gut. Careful examination failed to reveal constriction in any part of the intestinal tract, or abnormality in its outlines.

The writer regards the case as one of congenital weakness of the intestinal walls, probably due to defective innervation. During the last few weeks of life there was fecal obstruction, and during the last few days peritonitis.

GAILLARD'S MEDICAL JOURNAL.

VOL. LXXIII. NEW YORK, AUGUST, 1900. No. 2

A DEFINITE ACCOUNT OF MY POSITION UPON SOME APPENDICITIS QUESTIONS.*

By ROBERT T. MORRIS, M.D., of New York.

It is a pleasure to address to-night an audience in which every single member is interested in the subject. In all probability there is not one man here who has not lost some friend, some relative, some acquaintance, from the disease which is curable if the case is within reach of the enlightened resources of to-day. In an argument recently upon the subject as to when we should operate, my opponent said that it might be true that the prognosis or the nature of the case was always determined afterward in appendicitis, and not in advance; but he thought I had not made a point because the same thing was true of typhoid fever, of pneumonia, of scarlet fever. If we were able to find a small focus of infection in every case of typhoid fever; in every case of pneumonia; in every case of scarlet fever; if this small focus of infection could be readily recognized and picked up between the thumb and forefinger, and put into a bottle; how many of us would let our mothers, our fathers, brothers and sisters, die of typhoid fever, of pneumonia, of scarlet fever? Why then do we still allow them to die of appendicitis?

Now, let us take up the subject systematically. It is too large a subject for treatment in a brief way, and I have ventured to use tonight the title for the paper: "A Definite Account of My Position on Some Appendicitis Questions." I will first state my position upon certain points; and then will devote a part of the evening to answering questions which may be asked by any members of the audience. It seems to me that this is a very good way for bringing out and discussing points that are not quite clear, so that we arrive at a common understanding.

First, in regard to the name. Appendicitis is the proper pronunciation according to the direct authority of two philologists whom I have consulted on the subject. I am in the habit of using German and French a good deal in conversation and in my literary work, and the soft i seems much more euphonious and I would much rather use ïtis (etis), but itis in English construction must go over as i and must have the harder sound, and we must say appendicitis, peritonitis, and itis wherever this word occurs, as the English equivalent for the Greek *ἰτὶς* inflammation.

In what proportion of the population does appendicitis occur? I made an attempt at getting an estimate by writing to a number of physicians, asking them to tell me how many new cases of appendicitis they had treated during one year. Not all of the physicians to whom I had written had kept records, but among those who answered who had kept records of their cases, the average number of new cases during that year was four. I think that four is rather above the average, and that the men who kept the best records were the men of scientific attainments, who were, perhaps, most likely to have had a larger number of cases. Then again not all of the physicians in the country are engaged in practice which includes treatment of appendicitis. I have placed the number of new cases each year in the practice of each physician in the United States at two. There are one hundred and three thousand (103,000) physicians in the United States, according to Polk's last Medical Register. That gives us approximately, pretty close, I think, an idea of the appendicitis cases occurring in the United States annually, in patients who are under the care of physicians; and the majority of cases do sooner or later come under the care of some one of the one hundred and three thousand physicians.

---

*Address delivered before the Cleveland Medical Society, March 23, 1900.

The cause for infective appendicitis is anything which produces a break in the guarding epithelial cells of the mucosa of the appendix. When the guarding epithelial cells are broken at any one point, an infection atrium is caused. This atrium, or gate-way, allows the bacteria to enter the lymphoid structure and a swelling of the lymphoid coat then occurs. The guarding epithelium is broken by a concretion which causes erosion at one point; the guarding epithelium is broken when a sudden twist of the appendix upon its long axis by the action of the psoas muscle creases the mucosa; the guarding epithelium is broken when desquamation of the epithelium occurs, as in typhoid fever, in simple colitis, in any one of the many sorts of catarrhal infection of the mucosa of the colon in which desquamation of epithelium occurs. This is the first point that I wish to make; that the guarding epithelium is broken in any one of many ways frequently, and then a point of most importance—the keystone point in the development of appendicitis—appears.

The lymphoid coat cannot swell much without cutting off its own circulation; without producing compression anemia; for the reason that it is confined within a narrow sheath of muscularis and peritoneum. If we tie a string around the finger tightly, the finger swells and becomes tense. Gangrene of the finger will occur provided that the string has been tied around it tightly enough and has remained long enough. If the muscularis and peritoneum are tied about the lymphoid coat of the appendix tightly enough, gangrene occurs.

Gangrene occurs in several ways. When the compression caused by the swelling of the lymphoid coat causes compression anemia of the lymphoid coat, the lymphoid coat is open to the attacks of bacteria, because owing to the anemia the leukocytes are not there to engage in the battle royal which takes place when the bacteria attempt to enter the precincts guarded by White Police—the polynuclears.

We have then an infection-atrium in the guarding mucosa; we have a swelling of the lymphoid coat within the tight muscularis; we have compression anemia, and we have bacteria attacking the structures subjected to compression anemia. The results of bacterial infection at this point cannot be estimated in advance. When we have a similar bacterial infection of the lymphoid coat of the colon the swelling of the different coats can go on freely; we do not have the compression anemia which allows the bacteria to produce such ravages unchecked by the White Police—the polynuclear leukocytes. In the appendix the bacteria are free to act as they please. The warfare then continues to various extents and is limited eventually by the White Police, or the bacteria occupy the field.

Then the bacteria come to an ending in one of two or three ways in any given case. In some of the cases which end by resolution, so called, they produce suicide with their own toxins. In a barrel of apple juice fermentation occurs by saccharomycetes until a certain proportion of alcohol has been formed. The alcohol is the toxin; the alcohol is sufficient to destroy the saccharomycetes; they have committed suicide by their own toxin. Then acetus fermentation follows. Again the toxin, acetic acid, produces destruction of its microbes. So in any case of progressive appendicitis; the bacteria walled in, not escaping from the confines of the appendix, commit suicide with their toxins, and we have remaining spores or latent bacteria which remain ready for development when favorable conditions arise again. The case may go on for a week; for a month; for a year; for ten years, without further development of the bacteria, but in most cases when infection has once occurred it will occur again within the next year.

Bacteria come to an end in another way. In a certain proportion of cases there is a sufficiently good capillary circulation to allow the polynuclear leukocytes to destroy the bacteria as rapidly as they develop, and to carry them away, so that the warfare is waged successfully on the part of the polynuclears. The warfare between the polynuclears and the bacteria together with the tendency of the bacteria to kill themselves by their own toxins brings the infective process to a standstill, and nature then proceeds to absorb the products of the infection.

In most cases in which we have had one attack of acute infective appendicitis there is an ulceration of the mucosa, and the resulting scar, like a scar of the urethra, contracts and closes the lumen of the appendix at one or more points, more or less completely causing a mucous inclusion. According to records of cases which I have kept a mucous inclusion occurs in upwards of 80 per cent. of all cases in which the patient has had one or more attacks of acute appendicitis. In about 12 per cent. we have concretions; some fecal, some phosphatic, and some partly phosphatic and partly fatty, from degenerative changes taking place in the lymphoid coat. I have made chemical analysis of a number of these and found some in which the proportion of fat amounted to 50 per cent.

The diagnosis of appendicitis seems to have been a stumbling-block in the way of many physicians because they attempted to comprehend the subject too completely for a clear diagnosis. It seems to me the most important point—the chief point—in making a diagnosis, is to depend upon skillful palpation. If I were to teach an assistant to make a diagnosis of appendicitis, I should have him palpate first, before telling him any of the symptoms or asking him to elicit any other history from the patient. Don't get the subjective history, but feel of the appendix, and hear what the patient has to say about it. Why even people who do not pretend to be expert make the diagnosis by this cardinal point. Not long ago, in Connecticut, I was called to see an ordinary farm hand. In giving the history of the case he said: "Well, Doc, I began to have pain in my stomach last Tuesday, and I expected I had this here appendicitis; but I wasn't sure of it until Friday, and then I called in Doc." He did not call the doctor until he was sure of his diagnosis. There was an ordinary farm hand who had made a diagnosis which was correct. He had perforation. In another case a boy fourteen years old came for me not long ago, and said the doctor at the house had sent for me. I got the history of the case from the boy. He said: "Willie and I were throwing snow-balls; he hadn't been feeling very well since yesterday. We were throwing snow-balls this morning and he began to have stomach-ache and went in and lay down on the lounge; and mamma sent for doctor and he came up and examined Willie and said that he had eaten something that had disagreed with him, and gave him some medicine and went away. And after Doctor went away Willie said his stomach was so sore that I pushed on his appendix to see if he didn't have appendicitis, and when I pushed on his appendix he yelled right out, and I didn't wait to say anything to mamma or anybody, but I went right down to Doctor's office and said: 'Willie has appendicitis,' but the Doctor said: 'No, he has eaten something that disagreed with him.' But I said, 'but I pushed on his appendix and he yelled right out, and he has got the appendicitis,' and the doctor went up with me and found Willie had appendicitis." These are cases that occur in your practice. Now why is there such a stumbling-block in the way of making a diagnosis, when the farm hand will not call the doctor until he is sure of the diagnosis; and the boy fourteen years old brings the doctor back and insists upon his making the diagnosis? If we depend upon this cardinal point in diagnosis by palpation, we have the keystone in the whole series of points and testimony we elicit in making a diagnosis. In an acutely progressing case with rigidity of the abdominal muscles we cannot palpate well; but the rigidity of the abdominal muscles means so much in itself that it can be taken as testimony of great value. If we have an infection of the oviduct lying alongside of the appendix we are not likely to have rigidity of the abdominal muscles. If we have infection of the appendix lying alongside of the oviduct we are almost certain to have extreme rigidity of the abdominal muscles; because a different set of sympathetic ganglia is excited for each separate viscus; and while the rigidity of the abdominal walls is not peculiar to appendicitis, of course it is characteristic of it, and so characteristic of it that it must be considered as one of the first and most important points in our diagnosis. I am speaking of things which are perfectly well known to a part of the audience, which may not be perfectly well known to another part of the audience; in order to bring out points which I wish to make, I am including points which are probably well known to the audience.

The question as to time for operation is one that has caused a great amount of discussion in the profession. It is one that is likely to cause very much more discussion; but why? Assuming that a case is within reach of enlightened medical resources, of enlightened surgical resources, we know that the progress of the infection can be stopped promptly by proper operation, if operation be done as soon as the diagnosis be made, provided that the case has not gone on already to complications such complications as mesenteric thrombosis, pylephlebitis, portal embolism, and other grave complications which we know are outside of the reach of the surgeon. In any acutely progressing case it is impossible to state in advance what the eventual outcome of the case will be. In any acutely progressing case, taken before the dangerous complications have appeared, the case should be quite curable, promptly, by proper surgical operation. The death rate in cases operated upon before dangerous complications have appeared is very small indeed. In one consecutive series of one hundred and seventy cases (170) of mine (which I will publish in the *New York Medical Journal* soon) there were no deaths at all, not one. And I think this proportion of recoveries by no means applies to my own kind of work. It is the kind of report that can be made by many other surgeons who pretend to be familiar with good methods for work in these cases. If we operate before dangerous complications have appeared it gives us an opportunity to make the death-rate; the suffering-rate; the loss-of-time-rate, less than it would be under any form of medical treatment; and to carry out this statement I asked ten consecutive patients, who had been operated upon, to state their impressions. I began with the last patient out of bed and went back ten. I wrote to each one and published the report. Which allowed the more suffering, medical treatment or surgical treatment of appendicits? Most of the patients had been subjected to various kinds of medical treatment. Most of them had had more than one attack. I do not know that any of these patients had any particular reason for trying to please me by their answer; in fact I know that two or three of them had made a good deal of complaint because they thought my bill was too large; but every one of the patients said that he preferred surgical treatment to any form of medical treatment. This report I have published: It is well worth critical attention; the fact that ten consecutive patients, unselected patients, representing almost every form of appendicitis, one or two almost moribund, some of them after wasting weeks or months of time in bed, some of them with less serious cases, all gave testimony of the same sort. On the ground that we can save time for the patients by prompt operation I believe in operating as soon as the diagnosis has been made, as a rule. There is opportunity for nice judgment in many a case, if nice judgment is used. Let us say that the patient has diabetes, and not a very severe attack of appendicitis; let us say that he has advanced valvular heart disease with dilation succeeding compensatory hypertrophy. Shall we subject this patient to the dangers of the anesthetic or shall we allow him to risk the dangers of toxemia? Which is the more dangerous, toxemia or ether? That is a point for nice discussion, for nice judgment by competent consultants. But these are the exceptions to the rule, and the rule that I make is that we are to operate when the diagnosis has been made, for the purpose of preventing further complications, for the purpose of saving time, for the purpose of avoiding suffering.

It is difficult to avoid making this address too technical; I am trying to steer between Scylla and Charybdis. I am trying to take up questions that will bring out a practical discussion.

In the way of operative procedures before pus has appeared, I believe in making a very short incision, as many of you know. Much fun has been made of my inch and a half incision and week and a half in bed. The latter part of it was added by one of the house surgeons. In lecturing before the class, I stated that most of the patients that had had incisions an inch and a half long had returned to their homes within ten days, and one of the house surgeons said: "Why, that's a week and a half." I included that in the caption of an article, without any intention of attracting attention, and a good deal of comment has been made over it. However, it has been effective in showing that a short incision is sufficient in the majority of these cases, no matter whether adhesions are present or not so long as we have not pus outside the appendix. I believe that no man should begin his operative experience in these cases with any such incision. I believe that he should make the incision as long as he needs to make it for his best work. I believe that, as he improves in his work and makes it better and better, he will make his incision shorter and work more by the sense of touch, and finally give to the patient the artistic touches which the patient does not appreciate and which make him believe his case was not a very important one after all.

In cases in which we have pus outside of the appendix, in cases in which we have pus walled in, I believe in the technic of opening the abscess and of blowing out the pus with full strength of hydrogen peroxid; and I believe this to be a sheet anchor in technic. The reason why I believe this to be a sheet anchor in technic is because I hear so many operators speak of the danger of lighting up peritonitis by separating adhesions and removing adherent appendices in cases in which we have pus. I do not remember ever to have seen peritonitis follow an operation in which we had pus in which I separated adhesions freely and removed the appendix, provided that I had first blown out the pus with full strength hydrogen peroxid, then had washed it out with physiologic salt solution and had next proceeded to separate adhesions and remove the infected appendix. I make it a rule to separate adhesions in the search for more pus cavities, in the search for an appendix which often contains a concretion or two or a mucous inclusion or a focus of infection which will cause long convalescense or further recurrence if it is not removed. The policy of simply opening the abscess must result in many deaths from neglect. But if one finds that his preparation does not allow him safely to separate adhesions, to remove an adherent appendix of this sort, he had better not do it; better content himself with opening the abscess and draining, and hoping that that will be sufficient in that particular case. It is not the best work, but it is the best thing that can be done for that particular case, provided that the operator does not feel safe in going ahead and separating extensive adhesions and removing adherent appendices. It is a point for moral consideration. To what extent shall an operation be carried? Logically, it is to the extent to which the operator feels that he is operating safely. If his training had been sufficient to allow him to open multiple abscesses, separate extensive adhesions and remove adherent appendices, then he is doing his best for the patient.

In cases in which we have extensive suppurative peritonitis, not walled in by adhesions, what is the technic? I have often heard it said that these patients are bound to die; I often hear it said that if these patients recover, some part of the peritoneum was not infected. Perhaps some little segment here and there has not been infected. But this argument is quibbling. The cases that we call general septic peritonitis with appendicitis are very frequently curable, and some of the most interesting cases that I have are cases of this form. I have two under my care at the present time. One patient operated upon a month ago has a temperature, I presume, to-day of 102°, and a pulse, I don't doubt, still at 130—operated on a month ago—but I am sure she will get well. She is gaining flesh slowly, and is getting rid of her toxins. She has had a violent explosion in the midst of her sympathetic ganglia; it has taken her a long time to recover from it. The principles of treatment of these cases of general septic peritonitis are two. (1) Remove the chief toxin-bearing collection of fluid by washing out the pus from the pelvis and abdomen through small incisions, without handling the bowel much. These patients do not bear extensive handling of the bowel. I would rather make two or three incisions, introduce the Chamberlain tube, wash out the abdominal cavity with several gallons of hot physiologic salt solution than to handle the bowel at all. That removes the chief toxin-bearing collection of fluid. While this is being done an assistant gives an intravenous injection of physiologic salt solution, three or four pints of fluid, causing such tension that the emunctories rapidly carry off toxins from the circulatory system. We carry off, then, mechanically, rapidly, the chief collection of toxin-bearing fluid in the abdomen; we carry out of the circulation by separate force, by physiologic process, the toxins that are poisoning the patient. If we depend upon either one of these resources alone, almost every patient will die. If we apply these two resources in these cases, a good, large proportion of them will live.

It is said we cannot get all of the pus out of the abdominal cavity by washing. Very true; we do not need to. If the surgeon operating upon a case of suppurative peritonitis pricks his finger, he dies, the patient lives. Why does the patient, with quarts of pus, live, while the physician, with a trifle that cannot be seen with the naked eye, dies? Because we are depending again upon our polynuclear police. We have in the case of suppurative peritonitis an established hyperleukocytosis which has grown with the needs of the patient with his developing infection. Bacteria are rampant, they are rapidly developing in a favorable culture medium; but the polynuclears are there to meet them, and if we remove the chief toxin-bearing collection of fluid, the polynuclears then step in and gain the mastery, and the patient recovers. But in the case of the pricked finger of the surgeon the polynuclears are not ready, the bacteria are in a state of active development, and overwhelm the patient before he can adapt himself. This is a point which we must consider of very great importance in discussing the philosophy of recovery of cases of general septic or general suppurative peritonitis.

I will not go into the details of collateral treatment—the matter of stimulation and feeding. All these are interesting, but they form a large subject in itself. I will try to strike out a few principles which I believe to be extremely important and the observation of which leads to success in the treatment of these cases.

For the same reason I do not like to handle the bowel, I do not believe in using gauze packing. In cases in which we have opened the abdomen and have evacuated an abscess, I close the abdomen; sometimes completely, sometimes using a small drainage wick of gauze rolled in gutta percha, like a cigarette. The paper of Dr. Clark, in the *American Journal of Obstetrics* of some two or three years ago, was one of the most important papers upon the subject ever published, but has not been read generally by the practician, I find. Dr. Clark showed how he could close the abdominal cavity completely after operation, in cases in which he had removed pus tubes and suppurating appendices, and the patients recovered without drainage. That was because he depended upon his polynuclears and upon his emunctories. If we use a gauze packing we shock the patient. The patient next morning has dull eyes, cold perspiration on the forehead and apathetic face. The patient does not recover. You say it is because you did not get the case in time. If you will step out on the street, take ten policemen from their beats tonight, put half a yard of gauze in the abdomen of each of those policemen, you will find you did not get them in time! Now, if those ten policemen cannot bear half a yard of gauze in their abdominal cavities, why can a poor, weak, septic, appendicitis patient bear it? He can *not* do it. We have depended upon our previous experience and have been guided step by step until we have arrived at our later-day methods, which are so successful, by eliminating the dangerous resources which we had to learn about by experience. If we have to leave a wound open for oozing from adhesions, as may occur, then we may have to use some gauze packing; but as a rule we must leave it out; we must not use it as a routine practice.

If we use iodoform gauze we shall have iodoform poisoning. Not infrequently it passes for septicemia. Many a time I have stepped into a hospital ward. I have had the house surgeon say to me: "This patient was operated upon, but pretty late, and he is dying of septicemia." I felt of the pulse, smelled of the breath, looked at the patient and said to the doctor: "That's iodoform poisoning." The doctor will say: "I do not think so; we have not had a case here." We will take a little of that patient's urine in a saucer, add a pinch of calomel, stir it up with a toothpick, and see if we do not get the brownish reaction. Many a time I have been thanked by the house surgeon for calling his attention to the fact that the cases that were passing for cases of septicemia were cases of iodoform poisoning. The symptoms are so similar that they are frequently mistaken the one for the other. In cases of iodoform poisoning, however, we have regularly one feature that is characteristic, and that is the good appearance of the wound. The wound looks well and the patient does not. In cases of septicemia the wound does *not* look well, neither does the patient. That is a point of practical importance. But the examination of the urine will show us that iodoform poisoning occurs in a much larger proportion of cases than most of us suspect, who have not made examination of any cases in which iodoform was in contact with the peritoneum for any number of hours.

In cases in which we have to leave the abdomen open for any reason, we are apt to have post-operative hernia following. In cases in which post-operative hernia follows, we can readily cure the case by dissecting out the muscular planes separately and uniting them separately afterward. This is a point of great importance—the separate suturing of the muscular planes. I make my first landmark the external-oblique aponeurosis, and my next landmark the internal-oblique and transversalis. Then, without opening the peritoneal cavity in many instances, bring structures together by separate lines of continuous suture, each muscular plane in its proper position; and the cases are quite curable treated in this way. In the case of a fecal fistula occurring after the appendix has sloughed, after part of the cecum has sloughed, after an opening has occurred in the bowel, we will find that most of the cases need a systematic neglect; most of them will stand that treatment; but in case of necessity for closure of the fistula at the end of six months or a year, the fistulæ are dissected out without much difficulty and the opening closed, as in cases of post-operative ventral hernia.

DISCUSSION.

Dr. Hunter Robb—In order to start the discussion, I will say a few words. I am sure that we have all been much instructed by Dr. Morris's eminently practical lecture. I was especially interested in his presentation of the etiology of appendicitis. My experience in these conditions has been largely with cases of chronic appendicitis, in connection with pelvic inflammatory disease, and I suppose that I remove the vermiform appendix, as a supplementary procedure, in probably one-fifth of all abdominal sections that I perform. In the majority of these cases I find the appendix bound down by adhesions to the cecum.

On microscopic examination of these appendices we frequently find little or no pathologic change in the tissues of the organ itself. Probably a periappendicitis is a relatively common condition, and, as can be readily seen, an inflammatory process starting in the tissues round the appendix, if it should continue, could easily produce as much mischief as when it begins within the organ. I am inclined to believe that there are a considerable number of cases of appendicitis which occur secondarily to inflammatory conditions of the tubes and ovaries. Under these circumstances the process in all probability involves first the peritoneal structures of the appendix, further extension to the other tissues depending to a large extent upon the virulence of the infection and the resistance of the structures.

With reference to the use of drainage, my experience in treating pelvic inflammatory diseases, even where pus is present, would lead me to endorse Dr. Morris's views. In a series of twenty-nine consecutive pus cases that we have had within the past year, we employed drainage in only one case; every patient recovered. In some instances there was as much as a pint of pus freely distributed in the abdominal cavity. Fortunately, as is well known, the pus which is found under these circumstances, as a rule, is sterile, and in those cases in which we found bacteria on coverslip examination, the organisms had undoubtedly lost their virulence. In cases of pelvic inflammatory disease associated with pus in which the result has been fatal, it has been our experience to find in most instances the *streptococcus pyogenes* at the time of operation. The post-operative history of these cases is of considerable interest, as in a very short time the temperature rises to 104° or 106° F., or even higher. When, therefore, we meet with pus at the time of the operation and we are not able to demonstrate any bacteria either by coverslip examination or by the inoculation of tubes, and when, nevertheless, the patient develops a fatal septic peritonitis, we always ask ourselves whether we may not in some way have introduced the infective material. If, on the other hand, the pus examined at the time of the operation shows the *streptococcus pyogenes* and the patient subsequently dies, we feel convinced that the infection was already present, and was simply waiting for some traumatic influence to start it afresh. It can readily be understood, then, that when the pus is non-virulent the wound may be closed; and even in cases in which it is of a virulent character, the use of drainage will not, in our experience, always save the patient's life. In conclusion, I wish to thank Dr. Morris again for his interesting talk.

Dr. F. E. Bunts—I wish also to thank Dr. Morris for his interesting address; and I am glad he has offered us the opportunity of asking questions and possibly of expressing our own opinions, which I am sure are not based on anything like the vast number of cases which he himself has dealt with.

There are two rather important matters which the Doctor has brought up this evening. One of them is that of cleansing out the pus cavity. He says that in cleansing out, as a routine practice he uses hydrogen peroxid. I am very much interested in hearing this, because some time ago I gave up the use of hydrogen peroxid, not in this class of cases, because I had not used it there, but in my general surgery—in pus cases anyway. I have absolutely done away with the use of hydrogen peroxid. At one time I was an enthusiastic believer in it, and I am prepared to adopt it again if it is the best thing to use. I have found repeatedly in pus cavities in which there were sinuses where pus had burrowed—between muscles, for instance—that after the profuse use of hydrogen peroxid and cessation of the bubbling and sizzling of the peroxid, I could still squeeze out a little pus. In other words, it is not the surgical ferret which it was advertised to be when it first made its appearance. In a pus cavity in which there are no secret pockets it may be of great use. I am inclined to think, however, that a pus cavity which is free of access, which can be mopped out thoroughly with dry gauze and then washed out with normal saline solution, would probably be as clean as if hydrogen peroxid had been used.

In regard to the use of drainage, I am satisfied that the general practice in the past few years, and no doubt largely due to Dr. Morris's insistence upon this, has been to do away with drainage; and yet I feel very sure that most of us have at times used drainage in doubtful cases. Whether we were wrong or not in doing so is perhaps a matter of opinion. I do think, however, that the Doctor was making a rather strong statement when he said that if ten policemen were brought off the streets, and if a piece of sterile gauze was inserted into their abdomens, under antiseptic precautions, most of the cases would have died. I am sure all of us have put gauze into abdominal cavities often and have found none of the collapsed condition that would be traceable to the gauze. That it does occur I am prepared to believe, but that it is the rule when there are not other important factors at work I can scarcely believe. I feel that a piece of sterile gauze can be put in the abdominal cavity without doing material damage, if it be done under antiseptic precautions. That it is a proper thing to do I do not argue, but I think many of the symptoms coming after the introduction of gauze may be due to the fact that the pus contained streptococci, while in the others the germs were either not present or had been killed by their toxins.

Dr. O. B. Campbell—The Doctor says that in a series of 130 acute inflammatory case all were successful—that all got well. I would like to ask the Doctor if a large majority of those would not have got well under medical treatment? Is the result attributable altogether to surgery?

Dr. C. B. Parker—I thank the Doctor for his address. There are a great many practical points in it. To me I think one of the most important parts is that in which he discusses the question of non-drainage. In some classes of abdominal work it was comparatively easy to lay aside the Mikulicz tampon and other devices of gauze; but when it came to closing up the abdominal wound in which there was pus, it was another question. For the last year and a half, as some of you know, in my work in appendicitis, I have not used any more drainage than the ends of the ligatures that have been washed in distilled water, laid in absolute alcohol, and then at the end of the operation gathered up and wrapped with a piece of cat-gut into a sort of fascial bundle about half the size of a lead pencil, and that introduced into the wound. Of course I believe that it is not necessary to carry out the whole of this program, and that the peroxid is an ideal method of washing out these pus cavities.

Dr. A. F. House—I would like to ask Dr. Morris how he treats cases of appendicitis that have gone along for several days, and there is much plastic material, where the abscess is walled off, one wall being formed by the omentum and the other by the parietal peritoneum, whether or not, in those cases, he would break up that plastic material, and go through the omentum to search for the appendix; whether he would drain in a case of that kind or close the wound.

Dr. W. H. Humiston—This paper has been of practical importance to every member present. I believe in early operation, and I am a believer for the reason that the sooner you operate the less danger you have to face. Within the past year I have had appendicitis in my own family. My little girl, five years old, was taken at 8 o'clock in the evening; she had been well up to that time, and was operated on the next day, a little less than eighteen hours from the beginning of the attack; but even then we had a sloughing of the appendix, the bowel contents escaping into the peritoneal cavity; formation of pus, and already quite a large area of pelvic peritonitis. Could we, in this case, have saved the child had we waited a few hours longer? Up to about three hours before operation the pulse was not more than 100, and the temperature 99°. Within an hour the pulse had gone to 120 and the temperature 103°. In this case, a member of the family, I favored immediate operation, and it was the early operation that saved her life.

In catarrhal appendicitis, before sloughing occurs, I do not believe it is necessary to lose one patient, providing the surgeon who is operating is one who is skilled in modern technic. I believe in operating for appendicitis as soon as the diagnosis is made. I grant you that a great many of these patients would live to have a second and third, perhaps a fourth attack; but there is much time lost, and suffering, and finally the operation that must be done will be of such gravity that it is nothing in comparison with the ease with which the patient would have recovered had operation been done earlier.

In reference to the subject of drainage spoken of to-night: It is certainly an interesting and vital question. Before the article by Dr.

Clark had appeared, in my work at the City Hospital we were forced, as we thought, to do away with drainage. We were there confronted with a condition which made drainage most hazardous. The number of diseases in the hospital and the inability to have expert nursing for the first two or three days after inserting the drainage tube made us hesitate. In one case in which we had pus tubes and ovarian abscess—extensive adhesions separated, resulting in a very large area of raw surface left in the pelvis and on portions of the intestines after operation, the question arose whether to put in drainage or close it up. Knowing the surroundings that the patient would be subject to, and the lack of special care that we might have were the patient able to employ a special nurse, we closed the abdomen without a drain, and the result was most happy. For that year at the City Hospital I didn't drain one pus case, and in my private hospital I drained every pus case. The percentage of recovery was greater at the City Hospital without drainage than in my private hospital with drainage and specially trained nurses. Since that time I have not used drainage at all, and my death rate is lower than it was before discarding it.

Dr. N. Stone Scott—I would like to thank Dr. Morris for his valuable suggestions, and I would like to ask him one or two questions. Most of the cases taken up in the discussion were of acute appendicitis. It is usually easy to lay out a course of action if you see the case early, or if you see it late. I would be pleased to hear the Doctor's idea about the management of bad cases in which he sees the case from the third to the tenth day.

Two other points which the Doctor did not bring out are the frequency of chronic appendicitis and his treatment of the stump.

Dr. H. J. Lee—I have been greatly interested in the address, and am very thankful that Dr. Morris came here to give it to us. I was especially interested in the statement he made that he believed the case should be operated upon when the diagnosis was made. I am a firm believer in operating upon every case when the diagnosis is made. That is a pretty strong statement to make, and I am aware that many cases will recover without operation. I am also fully aware that not every case of appendicitis will have a recurrent attack. Nevertheless, I firmly believe that the safe course is to operate as soon as the diagnosis is made.

If you do this before rupture has taken place it seems to me there is little if any more danger in operating than between attacks, which is considered such a desirable thing. I fail to see where the danger is greater. In a certain class of cases that you come to a little late, which would seem to be recovering from an acute attack, it seems to me you are just as safe to operate. In those cases rupture has not occurred, and if rupture has not occurred it seems to me the operation is not particularly dangerous. I am saying all these things from the medical and not from the surgical standpoint.

Of course, we must also take into account the future of our papatient. If we have a patient with an acute attack, and we have him under circumstances where he can be operated on, we are saving him from some risk if we operate on him—from some risk of future attacks; because he may have a future attack when he is not so favorably situated. I can recall a number of patients who had been waiting to be operated on between attacks, who, in the ordinary course of business or pleasure, had drifted away from the reach of surgeons, had an acute attack of appendicitis and died. I can recall no less than three of these cases. All these things must be considered when we come to a case of appendicitis; and I say, and say it without hesitation, that the safe course is to operate in every case when the diagnosis is made. If rupture has occurred of course the only hope is operation. And so it seems to me there is no safe course left in which a man can feel positive that he has done the best thing for the patient unless he has advised surgical interference as soon as the diagnosis is made.

Dr. A. B. Walker, of Canton—I want to thank Dr. Morris for his address. I would like to ask him whether or not all cases of streptococcus infection die, and what his experience has been with antistreptococcus serum?

Dr. Morris (closing)—First, Dr. Robb's point, about the appendix becoming infected from the peritoneal side. That does occur; the infaction-atrium does occur in the peritoneum, the peritoneal coat of the appendix, as well as in the epithelial coat; but when it occurs by way of the peritoneal coat it is usually a slowly progressing infection from some other point, and the structures have time to become hypertrophied in a compensatory way and to guard against the kind of infection which leads to compression anemia and destruction of the appendix; but some of these cases do go on to destructive infection of the appendix. In quite a good proportion of cases, as Dr. Robb says, it is quite true that infection has occurred from without, and I think you will often find in these cases hypertrophy of the connective tissue; very often there is compensatory hypertrophy, and yet it has not gone on to destructive inflammation. That is because the infection-atrium has allowed a slow progression, that we have not had the pressure anemia.

I examined the pus in a long series of cases; all of the hospital cases for a long series, and in most of my patients outside of the hospital, where I carried my tubes of agar in my valise, taking cultures from each case. I found, as Dr. Robb says, that the pus in many of the cases is sterile, or at least the bacteria are not virulent; but in a great many other cases of the kind I see in acutely progressing disease, we have the colon bacillus as the chief malefactor; often streptococci; sometimes staphylococci. I have found in pure culture *staphylococcus albus*, a curious thing, and there were apparently no other bacteria present. We find vibrios and all sorts of saprophytes and curious things in the cases which are acutely progressing, in cases in which I have made a bacteriologic examination, and in cases in which I closed without drainage. I do often drain; not so often as formerly. I frequently close the abdomen in cases of large abscess cavities; but when

I do drain I use a small cigaret wick, which causes little disturbance, in the place of extensive gauze packing. That was the point I wished to make; that we could do away with a large amount of drainage that we formerly used; that in a good proportion of well-selected cases we could do away with drainage altogether except by way of the peritoneal lymphatics.

Dr. Tuckerman asks about closing multiple openings that I make in a case of general septic or suppurative peritonitis. I usually close all but the one opening into the pelvis and drain with a cigaret drain from the lowest part of the pelvis, and sometimes close that by pressure, temporarily leaving the abdominal cavity pretty well filled with hot physiologic salt solution.

These are all pretty technical points, almost too technical for discussion here. They are questions over which we have a good many sharp discussions among men who have paid particular attention to these very special points. I dread the thought of a general uprising of this large audience, as I have seen it in smaller society meetings.

Dr. Campbell asks, of the 170 cases which recovered, how many would have recovered under medical treatment? I presume that 75 per cent. would have recovered under medical treatment, but after a great deal more suffering than I caused them, after a great deal more invalidism than I caused them, after very much more loss of time than I caused them, after very much more anxiety. What if a young man is engaged to be married, and the young lady knows he is likely to have an attack of appendicitis every three months under medical treatment? She is on the ragged edge. Just think of the anxiety I have saved many a sweetheart. I know something about this part of it. We know from pretty well-collected statistics that at least 10 per cent. of the patients die in primary acute attacks, and that at least 15 per cent. die from subsequent attacks. We estimate the average death rate at 25 per cent., and so I presume that the actual death rate would have been 25 per cent. in those 170 cases, all of which recovered. But entirely aside from the death rate, let us consider the loss of time rate, the suffering rate, the anxiety rate.

Dr. House asks if I would separate adhesions in cases in which we had large masses of exudation and extensive adhesions with the omentum. Usually, yes, because I do not fear infection extending after I have destroyed the pus with hydrogen peroxid. I may find another abscess; I may lnd an appendix containing a concretion or some of the entozoa. I am very likely to find some of these things to be removed. I do not hesitate to break up extensive adhesion areas and dust them with aristol to prevent the recurrence of adhesion.

Dr Bunts asks about my use of hydrogen peroxid. I, too, have found that it is not always a ferret after a rat; but at the same time I have had ferrets fail to get rats in my barn. The rat managed to get a little ahead of the ferret. For the most part, however, the ferret would at least keep the rat going. I use the peroxid for its mechanical effect. It blows out all the fuming masses of pus and leaves the cavity cleaner than I can leave it with any kind of sponge. But this matter is to be determined by our ultimate results. If one believes that wiping is equally good with blowing out the pus with hydrogen peroxid, if he says that he does not have septic peritonitis following his extensive separation of adhesions, very well; it is just as good treatment. What we want to avoid is peritonitis following operation. If wiping is sufficient, that is enough. If the wiping and sponging are not sufficient, if the operator using this method finds that there is danger of extension of septic peritonitis after operation, then it is well to turn back to the question of the use of peroxid again. I feel that it is a sheet anchor in my own work. I get out the pus rapidly. I believe in rapid work in these cases; I seldom operate more than twenty minutes on the interior work in any case.

Dr. Bunts thinks that a certain amount of gauze in the abdominal cavity does not prolong the shock. I referred to the gauze packing that I have often seen used in New York and elsewhere, that was a foreign body; and if the Boers had been able to get half that amount of gauze into each British soldier, I do not think the outcome would have been what it has been.

Dr. Scott asks what I would do in an acute case far advanced at the time I first saw it. I operate; I don't wait for the case to get to the safe interval. On this argument, if all these cases would get to a safe interval, we would not need to operate to save life. Many do not get there. Try to give the patient the best chance you can. When we speak of operating in the safe interval, the word "safe" is meant to apply to the surgeon's reputation, not to the welfare of the case.

What proportion of chronic cases do we find. That matter of chronic appendicitis is one that requires some elaboration. When I speak of chronic appendicitis I mean cases in which we have had definite infective inflammation at some one time in the history of the case. Other men include cases, for instance, in which we have the congestion of the appendix that occurs when a loose kidney lies upon the superior mesenteric vein and causes a venous stasis below that point. Those cases are included as appendicitis cases by some physicians. The appendices are tender on palpation. We have another cass of cases undergoing a normal involution process; the lymphoid structure is being replaced by connective tissue. This takes place in many patients after thirty years of age. The connective tissue contracting, pinches the terminal ends of nerve filaments, and the patient has a constant irritation at that point, irritation enough to excite Auerbach's and Meisner's plexuses and a long train of symptoms. Simple pinching of the terminal nerve-filaments of the sympathetic by the contracting connective tissue which is replacing the mucosa and lymphoid structures. These also are classified by some as appendicitis cases. Now, I do not call this appendicitis. I do not call "appendicitis" cases that I see frequently, associated with colitis, in which we have a common affection, catarrhal in its nature usually, involving not only the appendix, but the colon, and not causing the special changes which set in motion the destructive processes in the appendix itself. In speaking of appendicitis, I refer essentially to infective appendicitis.

The treatment of the stump: I would, in cases in which it is feasible, invert the stump. I cut through muscularis and peritoneum very close to the cecum. I ligate the tube of mucosa to prevent infection escaping by the small lumen, and then, with a puckering string around the cecum, bury the stump very much as the head of the *cysticercus cellulosæ* is buried. In cases in which the tissues are so fragile with serous infiltrations that I cannot bury the stump, I try to bring the cecum to the surface and suture it at that point at the margin of the wound, so that if a secondary perforation occurs the contents of the cecum will éscape safely and externally, causing nothing worse than a fecal fistula. This has saved the life of three or four patients to my knowledge, in which secondary perforation did occur and in which the contents of the bowel would have escaped freely within the abdominal cavity if I had not given means for the short route instead. In cases in which I cannot bury the stump, in cases in which I cannot bring the cecum to the surface, I carry a wick drain down to the point likely to perforate, and sprinkle aristol or some other powder that will repel fluids well over the neighboring peritoneum. With the repelling powder covering the peritoneum in the vicinity to prevent infiltration from leaking of the bowel, and the cigaret drain to carry off any leaking material, I feel very safe with these cases.

Dr. Lee has stated well the fact that the safer course is operation when we have made a diagnosis. It would be the safer thing with typhoid fever, scarlet fever, pneumonia, if we knew how these diseases could be cared for and the whole dangerous process averted by a pretty little operation.

It is very true it is a serious thing to have the physician call in the surgeon; it is like a bombshell in the family, calling the surgeon on short notice; but so is a case of appendicitis. Calling the surgeon may be detrimental to the physician, but the physician is the responsible man; it is a moral responsibility. He knows and should be guided by his best knowledge, not by the wishes of people who do not know anything about the responsibilities involved. As a responsible member of the community upon whom the people place great moral burdens, he should shoulder the burden. Very often, in consultation, I have been called to state the point as to whether we should operate or not. It is usually some one of the family who is not suffering very much who objects to the operation, and not the patient. It is usually the mother-in-law, or the cook who has been in the family for seventeen years. I say, "Now, let us not discuss this matter at great length; two of you think we ought not to operate; two think we ought to operate; two are undecided; let us refer it to the patient." And I do not remember a case now in which the patient himself has not said, "Operate." The friends forget that Hamlet is in the play. In leaving the question to the patient it has been quickly decided, and many tedious consultations have been avoided.

Then again, the question of expense, of course, does come in. The physician does not like to call into his families, who, perhaps, cannot well afford the expense, some one who is skilled and is likely to send in a large bill for services. The surgeon's work is precisely like other physicians' work. Every one of us who has accomplished anything has been engaged in general practice. We all have common sympathies. We are all willing to work for nothing if the patient cannot pay more. We all like to ask a good fee when the patient can pay it. The physician and surgeon should understand each other; and unless they do understand each other, they ought not to attempt to work together.

Dr Walker asks about the streptococcus cases. We see many of them. I have examined many cases in which we had streptococcus infection—an acute, progressive, streptococcus infection—giving place perhaps, in a day or two, to the colon bacillus, the colon bacillus getting the upper hand of the streptococcus; yet the patient made a good recovery. I have not used the streptococcus serum, because I have followed the reports of men who were experimenting with it, and it seemed to me our data were not yet convincing as to its usefulness. It is in line of proper investigation, but apparently we are not as yet making profitable use of streptococcus serum in this particular class of cases.—*Cleveland Journal of Medicine.*

APPENDICITIS FROM A MEDICAL STANDPOINT.*

By I. N. LOVE, M.D., St. Louis.

Every appendix vermiformis, healthy or diseased, is individual unto itself. As its anatomy varies, so also does its pathology. McBurney's point is not always the proper point at which to look for the appendix. It may deviate to the left, up or down; in fact, it has been found in almost every region of the abdomen, and I once saw a man who, after long illness, passed fecal matter mingled with the urine from his bladder, was operated upon for supposed prostatic abscess and recto-urethral fistula without avail. A supra-pubic operation revealed a previous appendicial abscess; the appendix being resting upon the bladder, adhesions occurred, ulceration into the bladder followed. None but the experienced would have dreamed of looking here for an appendicitis.

Indeed we must remember that the various parts of the human anatomy vary as widely as do individuals, viewed from any standpoint. The primary necessity for a case of appendicitis is to have a physician in charge who can make a prompt diagnosis. It may be said that this is the case in all forms of disease, but it is more so for the successful management of appendicitis than for almost any other lesion.

---

*Read to Chicago Meeting of the Mississippi Valley Medical Association.

Let us all remember that every case of belly ache, cramps or pain in the guts presenting itself is a possible appendicitis; that any history of a previous typhoid fever, inflammation and congestion of the bowels or ovaries and peritonitis is a possibly unrecognized appendicitis, and that every victim of indigestion, particularly intestinal, is on the verge of appendicial inflammation at all times, particularly if he eats to excess or goes on a debauch. Let us keep in mind, too, that the victim of la grippe, the uric acid diathesis, and he who worships at the shrine of the "three L's"—Laziness, Luxury and Lust—is prone to the disease under consideration as well as the athlete. Appendicitis has been classified as catarrhal, ulcerative and perforative; but it is well to realize that an attack of appendicitis is inflammation of the appendix, and it is impossible to draw the sharp lines of distinction.

We doctors must learn and we must teach the fact to the laity, that an attack of indigestion, cholera morbus, diarrhœa, accompanied by pain in the belly, intestinal cramps, etc., must be treated intelligently along the lines of helping nature to get rid of offending material, recognizing pain always as nature's signal that something is wrong, and that it is our duty not to cover up and mask the sign, but to coax and coddle it by simple means, securing its help in locating its cause.

I do not hesitate to say that the doctor who would administer sedatives and pain killers to a case before making an approximate diagnosis, even though it demanded an all-night visit, would be justified in doping and deserting a woman in labor, without making an examination necessary to determine the position of the child or the stage of the labor, with a view to obtain his own quota of sleep. The class of cases to which I have referred are mistreated unless the attendant secures a thorough clearing out of the bowels (at least of the colon and stomach) before applying remedies which check peristalsis, and this can be best and most easily accomplished by means of hot water used freely internally, from both directions, and externally in the form of a hot all-over bath or the hot wet pack. The stomach may be well washed out by the drinking of one or two pints of hot water (or the stomach tube); as water is ejected and the washing is complete, another pint or two may be introduced; and quiet upon the part of the patient, with the head low, ice cloth to mouth, mustard plaster over "pit of stomach," will result in the water's retention; stomachic tranquillization will follow, and pyloric relaxation will soon convey the water into the bowel. If now repeated large, high-up enemas (and no syringe is complete without a long rectal tube) be given of one-half gallon—usually more—of hot water, freely mixed with soap (temperature of water to be 110° Fahr.), there will be a pronounced peristaltic wave all down the line, and irritating matters, undigested food, ptomaines, etc., will be carried freely out, and whether we have a case of appendicial trouble, beginning typhoid fever, or what not, our patient is in better shape. A colon and ileum loaded with fecal matter are a good riddance, no matter what we have before us. Lavage of the colon, free flushing, will start the current from the stomach downward.

As evidencing the value of colon lavage, Bidder, Schmidt, Zolesky, Rosenberg, Krull, Lowenthal. Barlura and others have reported clinically that the flow of bile, the urea, and indeed all the secretions are greatly increased. The eminent and painstaking specialist in gastro-intestinal disease. Dr. Fenton B. Turck, of Chicago, after numerous careful experiments and laborious effort in the treatment of the abdominal viscera in a large number of patients through the colon, has proven that the high-up introduction of water of a temperature of 111° Fahr. (owing probably to the favorable arrangement of the nervous mechanism and the reflexes of the colon) into the colon increases the blood pressure, the kidneys are stimulated (elimination of urea almost uniformly doubled), hepatic function increased, greatly increased leucocytosis induced, all the effects resulting in a general accelerated metabolism, oxidation and elimination; in short, the result is general cell activity.

Surely an all-night seance, if need be, with the acutely ill, resulting in a clearing away of fermenting food, accumulated fecal matter, ptomaines, etc., etc., whether he be in the initiatory stage of severe appendicitis, typhoid fever, scarlet fever or it matters not what, places our patient in a position more favorable to a mild course and prompt recovery.

I feel that I am justified in claiming the uniformly favorable termination of my intestinal cases for several years back to the fact of having given them the benefit of complete, prompt intestinal evacuation by the means of repeated colon lavage. I have found it well in some of my cases to administer broken doses of calomel triturates ($\frac{1}{8}$ grain) every hour (washed down by a glass of hot water) for ten or twelve hours, followed by a half tumbler full of Apenta water (a most excellent saline cathartic); this in conjunction with the colon lavage.

We must not take the word of the victim or his attendants regarding the evacuation of the bowels or anything else pertaining to the case until we have corroborated the evidence by all our five senses. After our diagnosis is made, at least approximately (and I claim that we or our assistant should remain with our patient until this is done), we may be safe in giving some potent pain reliever, if the suffering demand it; but opium in no form should be administered (the same as in administering chloroform or ether) until radical interrogation of the kidneys and general idiosyncrasy establishes the fact of its safety; but it should not be given at all unless we are absolutely sure that we are safe in ruling appendicitis out of our calculations.

Three deaths definitely, and possibly more (observed within a year), of uræmia, superinduced by morphine in cases of acute indigestion, complicated with crippled kidneys, which were not previously suspected, emphasize, in my mind, the point made above. Had the hastily summoned physicians met the emergency properly, they would have made their call an all-night investigation, instead of a hasty and reckless use of the mephistophelean morphine in the hypodermic syringe. At this point let me urge, with all the emphasis at my command, that the hypodermic syringe is mightier than the sword in the hands of the ignorant, the lazy, the thoughtless or the backboneless doctor.

After the alimentary canal has been entirely emptied (and not till then) we can thoroughly investigate it, and the complete intelligence and acute sensibility of the patient is essential to this investigation. On general principles I will say that it is very exceptional when a victim of abdominal disease, medical or surgical, is not better either before diagnosis or after, without opium than with it.

Let it not be forgotten that the pain of an appendicitis may be anywhere in the belly, and it is often least marked at the real site of the appendix (at least in the beginning). We all know how hard it is to locate definitely the intense pain of an ulcerating tooth, and we must keep in mind the scattered reflexes of the abdominal cavity. In a general way the reflected pain is apt to appear near the navel or in the vicinity of the stomach, and not above the diaphragm, as it is in gall bladder and bile duct disturbances; not to the end of the pelvis or to the thigh, as in irritation of the urinary bladder, though sometimes (as stated by Morris) the pelvic ganglia are excited to the point of radical appendicitis reflexes along the lines that are disturbed by a stone in the bladder. Palpation with the fingers of both hands, the one inside and the other outside of the abdomen, is the only method for obtaining evidence in a case.

Robert T. Morris, high authority in America on appendicitis, relates in some of his literature the remark of one of his fellow students in college days, who was instructed to examine a uterus in the dispensary. Says Morris:

"My companion introduced his finger into the vagina, and, after poking about for awhile, informed the instructor that the uterus felt just like the middle ounce of mush in a pailful of mush. I have little doubt that to-day this man can make out not only the different parts of the uterus on palpation, but also the ovaries and oviducts, and perhaps the ureters if he has taught his finger tips with as much care as he would employ in teaching a setter pup to retrieve birds."

I have been amazed almost uniformly, when called to cases under the care of other medical attendants, to find that they have not made a thorough investigation by first emptying the colon and then palpating the abdomen with one hand, with the forefinger of the other introduced up through the rectum. Here let me urge a more liberal education of the sense of touch upon the part of the doctor. (It took me ten years to unlearn the excessive importance of the fever thermometer. It is valuable often, but the pulse is a hundredfold more so, whether the lesion be abdominal, pulmonary, cerebral or cardiac, and I fear the clinical thermometer has been largely responsible for the absence of pulse knowledge in our profession during the last two or three decades). Yes, let us cultivate the "tactus eruditus" which will enable us to almost close our eyes and make a good diagnosis. We may take points from those specially skilled diagnosticians in our profession who have made the affliction of blindness intensify their sense of touch and hearing to such a degree as to develop them almost to the point of being wizards of diagnostic wisdom. The eminent Dr. Babcock, of the fair city of Chicago, is a shining illustration of this thought.

I have studied the question under discussion carefully for many years, but three years ago a loved one of mine fell a victim to appendicitis, and for eighteen months suffered constantly, during which time I almost completely relinquished all work, giving attention to this case. I very naturally devoted myself to the special study and observation of the subject.

I do not propose in this paper to consider or quote the views of other men (and there has been no line written or thought enunciated that I have not carefully read and weighed), but my own conclusions, and I must say they are not of a character to make me proud of my profession as a whole, viewed from the standpoint of appendicitis. It appalls me to recall the advice freely given to me by men very prominent in our profession against surgical interference, some going so far as to say that they had never had a case operated upon and had never lost a case.

First of all, no doctor's dictum is worth anything regarding the subject unless he has been a persistent student and placed himself in a position to have exhausted the entire literature of the subject and to have seen many hundreds of cases, under his own care as well as others under the care of abdominal experts, viewing them calmly, medically and surgically, without prejudice, keeping always in mind the thought in relation to the victim, "put yourself in his place." Prominent authority has well said, "An immense amount of bad advice is given to appendicitis patients by physicians who are not informed, and who do not know the contents of the text-books of our authorities upon the subject. It is not the fault of physicians, but of society, in demanding of physicians so much information upon so many subjects that it is a physical impossibility for them to cover the ground."

This may be true, but society does not demand that a physician should assume to know things of which, as a matter of fact, he is completely ignorant.

God help the family or the patient under the care of a universal specialist who is so busy that he can never go to a medical society and get the benefit of other men's views and experiences, and have the helping effect of criticism—some one to rip him up the back, as it were.

Moving as we do in a narrow groove, going from house to house where our word is law and few dare say nay, we run great risk of becoming dogmatic autocrats, saturated with the idea that we know it all.

I sometimes think it would be fortunate for us and humanity, as well as science, if every medical case had a pair of doctors instead of one. Then, as in legal cases, where there is always two attorneys pitted against each other, each would be stimulated by the other to his best endeavor. Indeed, considering the supernumerary doctors in every community there would be fewer idle ones under such conditions.

Unfortunately for us and our patients, we, as it is, are counsel, judge and jury, and I fear sometimes executioner. I believe a law should be passed that no capital operation should be performed until at least three to five experienced and well equipped doctors shall have passed upon the case (the major number to be established surgeons), and no two of them in the same medical college.

I believe further that every hospital, private as well as public, should be rigidly inspected by legalized competent authority, and that not only should every licentiate to practice medicine be made to pass a proper examination, but that every practicing physician should have to give evidence every five years of his ability to continue in the work.

First of all, I firmly believe that unless a doctor be especially skillful and dexterous in the handling of tools, the knife, the scissors, the needle and thread—a good mechanic, an artist—he ought not to do surgery of any kind. A good surgeon with a deft, delicate hand, had far better graduate from a manual training school, serve a short apprenticeship to a tailor, a carpenter, a sculptor and a draughtsman, than to have spent years with the classics and delving into bacteriological lore.

John Hunter, Ephraim McDowell, Marion Sims, Lawson Tait, Joe Price and Robert T. Morris are striking examples of the born surgeon, plus work.

And, by the way, we may well ask if we are not stuffing too much in our four or five years at medical college, and losing much by relinquishing the old-fashioned apprenticeship of three or four years as understudy under a good preceptor.

If these are the requisites for the general surgeon, they are doubly so for the one who does abdominal work. Except in rare cases, the general physician should not do surgery, and the general surgeon should not do pelvic or abdominal surgery any more than he should do eye surgery.

Of course, in sparsely settled neighborhoods, for a little while to come, in emergencies, the physician should be equipped to do anything and everything; but rapid transit is eliminating distance so fast that all will soon be in reach of the special skill of those in large centers, but, as a matter of fact, there is no reason why the country surgeon, if well endowed for the work, should not, with the numerous post-graduate facilities, equip himself well for every demand. Lawson Tait, the provincial surgeon of England; Ephraim McDowell and Marion Sims, the country surgeons of America, should stand as examples to all rural workers as to their possibilities.

In every community self-interest and humanity demand that the doctors get together and take stock as to their respective capacities, and divide up the work. There is not a section in America to-day where there is not a liberal supply of physicians, and no one man need be so overcrowded with work as not to do good work. We must all remember that the man in our profession who is in the work only for the money that is in it, is unworthy.

The misfortune is that the numerous wildcat medical colleges of the land, which have inveigled the untutored and ill-prepared from a thousand hills into the realm of medicine, are largely responsible for many evils in our guild.

Unfortunately, there are too many doctors who are surgically ambitious, not that they are specially graceful and well equipped along these lines; but the Bob Sawyer spirit in them prompts a love of the chances for the grand stand appeals to the groundlings, the vulgar herd, who think that the man who can carve and leave his trail in blood is the really great man in the profession. As a matter of fact, we should realize that this same vulgar spirit of the mob prompts it to idolize the brutal victor in a prizefight or enjoy a hanging, and we should, more of us, determine to devote ourselves to the less appreciated, but really more skillful field of diagnosis, therapeutics, physiology and pathology, and leave the realm of surgery to the born mechanic, artist, and give him our earnest co-operation and support. I fear sometimes that the prospect of larger fees allures men into the domain of surgery whose fingers are all thumbs, and who are as awkward in handling the scalpel as "the man with the hoe" would be in wielding the poet's pen or the painter's brush or the sculptor's chisel.

This brings me to the relation of the specialist in internal medicine and the surgeon. The relation is surely a delicate one. We should demand of the surgeon, if he expects our support, that he be worthy of it by first of all fitting himself by knowledge and experience gained under master surgeons for the work, and after not less than ten years of general work we should demand absolutely (and it takes ten years to develop a man's special fitness) that he limit himself to surgery. How else can we co-operate?

Surely if he accepts our case of surgery, sent to him as a surgical expert, he should decline our patients who go to him for medical service, allured by the thought that our reference of cases to him announced his general superiority. Any other course is not honest, but hoggish.

Furthermore, I insist that any case under the care of a good physician, a good diagnostician, competent to know when surgical interference is demanded, and just and generous enough to give his patient the benefit of expert manual and mechanical skill, still needs the constant care of his physician along medical lines so that he should remain with the surgeon, if not in attendance upon some infectious disease at the time, the two in conjoint care of him equally responsible, no visit to be made (except in emergencies) by either without the presence of the other. The physician is responsible for the diagnosis, for the selection of the surgeon, for the work as done, and is entitled to exactly the same fee as that of the surgeon, if his reputation be as great, and larger if it be greater.

Indeed, in all cases a physician the same as a surgeon should charge a fee for attendance in harmony with the severity of the case, the responsibility involved, the value of the life, the ability of the patient to pay and commensurate with his own reputation. In such cases the bills should be rendered synchronously and payments made equally, neither being a preferred creditor. Of course, the question of commission cannot be discussed by honorable men, but the time has long since passed when the surgeon should deem himself the grand Pooh Bah and Generalissimo of the profession. Now, such an one runs the risk very properly of being considered a "Jack of all trades" and good at none.

When doctors and surgeons arrive at a full knowledge of not only how to spell the word reciprocity, but its full meaning and the Golden Rule (As ye would that others should do unto you, do ye even so to them), as well, there will be more good doctors and a smaller number of poor surgeons and a goodly number of good ones, and the latter will not need to cut rates with each other for surgical operations, and make visits in large numbers in competition with medical men. Keeping in mind our duty to ourselves, to humanity and to God, there need be no trouble regarding the relations of the physician and the surgeon; but I hope I will be understood when I say that I believe the misinterpretation of our code of ethics protects mediocrity, general incompetence and almost criminal ignorance and recklessness in physicians and surgeons.

Doctors in almost every community are passing as surgeons and expert physicians (protected by the mantle of membership in our societies) who are painfully incompetent, and in many cases they are more devoted to the discussion of our code of ethics than they are to science. Unfortunately, nerve, audacity, secret societies, church connections and a love of lucre secure them cases for medication, manipulation and evisceration.

Reckless surgery in incompetent hands has been responsible for much of the aversion of the public to surgical interference in many cases demanding it. Happily for physicians, their work and results from incompetence are not so apparent.

I have taken it for granted that every member of this learned body is familiar with abdominal surgical literature, and those who have made that which is authoritative have written as ideal surgeons, working under proper conditions, and I take it that that is what every man who does surgery should be and can be if he tries; and if he can't, then he should abdicate in favor of the man who can.

Considering surgical interference in appendicitis to mean interference by men as capable as Tait, Price, Robert T. Morris, Reed, Baldy, McMurtry, John B. Murphy, Ochsner, John B. Deaver, and such as these, I conclude that appendicitis, from a medical standpoint, means that the earliest possible diagnosis should be made, and the appendix should at once be removed. Handled medically, the mortality is about 25 per cent., but of the 75 out of the 100 who recover, we can never know how many may have recurring attacks, and how many remain through life chronic invalids or die of other diseases invited by their unhappy condition.

In the hands of ideal surgeons (the expert abdominal surgeons I mean), the mortality announced (and I have personally observed the truth of the claims made by some of our best men) is from 1 to 3 per cent.; but even say it is 10 or 20, are we not all anxious to save five, ten, or fifteen lives (or even one) out of a hundred. I insist that with the light we now have and the record now made, that if a surgeon makes a poorer showing there must be something wrong with his methods, and he should, in the name of God and humanity, correct them, and unless he does, he should be amenable to the law.

The surgeon who does not believe in rigid asepsis, as applied to his case, his instruments, his entire paraphernalia and his personality should be eliminated, the same as the physician should be who does not accept in a judicious way modern medical methods in the treatment of disease, as, for instance, he who, with the evidence before us, denies his victims of diphtheria the benefit of antitoxin.

At this point let me remark that there is either something in sepsis and infection or there is not, and if there is, no man should be permitted to attend surgical cases, or parturient women who gives his services to cases of scarlet fever, diphtheria or other forms of real or supposed infectious diseases. With the knowledge we now have, I assert (in all kindness) that the physician or surgeon who attends both infectious and surgical or obstetrical cases is either ignorant or reckless, and in either case is open to charges of malpractice, and since the world is well supplied with doctors, there is no emergency excuse that can be presented in extenuation.

Are we not correct in insisting that those surgeons who work in sacred regions (speaking anatomically) where a single germ may be fatal when elsewhere the general result would be but little affected, shall guard themselves against carrying infection, so limit their work and husband their physical and psychical resources as to be always in such good form that their five senses, the sixth also (common sense), but most of all the seventh (moral sense), shall be acutely alert and their hands shall have their fullest cunning? The victim of excessive fatigue, drink, drugs or disease is in poor form for practicing medicine, but least of all surgery.

The half-sick doctor in charge of a patient is an epitome of the blind leading the blind, and all these points are arguments in favor of every medical and surgical worker limiting his labors, and having a pride as the years pass in not doing more work but better work, and having his patrons say how well you do your work, not how cheap, and realize that there will be one or more months in every year that his services are not available, as he is taking his proper vacation, recreating and seeing how the good workers the world over do their work.

I have seen surgery almost from the time I was sixteen years old, at the hands of masters, too, and I know well, if I know anything, that the happy-go-lucky, devil-may-care, modifiedly maniacal manifestation of Jack the Ripperism operating seemingly for the emotional pleasure, almost suggesting the insanity of Sadism; the knockdown and drag out, the sloppy, unclean type of surgeon as well as the overworked, fagged-out general family practitioner, and the man who has only limited opportunities for gaining knowledge of the best pathology, technique, and securing proper practice and skill in a general way should be called down and not permitted to invade the abdominal cavity. Too many men read the records made by the masters, then browse around for a week or ten days in some clinical amphitheatre, and fancy themselves full-fledged experts in abdominal work, when, as a matter of fact, they can't interpret the pathologic conditions they may find any more definitely than they can correct them.

In observing the work of Price, Robert T. Morris, Deaver, C. A. L. Reed, McMurty, Ochsner, Murphy, John Young Brown and others of our most successful workers in abdominal surgery, I have noticed that the abdominal incision was usually small (about one inch and one-half), the instruments few, and few or no other hands permitted to touch the field, the material or tools used, and quickness of work was uniform, so that the belly interior was exposed the briefest possible time.

ABORTION.*

By E. T. DICKINSON, B.S., M.D., Smithfield, N. C.

This paper shall be an effort at brevity embodying points not beyond discussion, and yet the properly recognized and well-tried teachings and methods which should be remembered in the management of every case of abortion coming under our professional observation.

Expulsion of the ovum before the period of viability will be understood as abortion; that occurring after the child is viable to within a few weeks before the normal termination of pregnancy as premature labor. The period of abortion extends to the twenty-eighth week of pregnancy, and on account of improved incubation is growing shorter. Premature labor includes the period of the twenty-eighth to the thirty-eighth week of gestation, and for the same reason is growing correspondingly longer.

Abortion is of frequent occurrence and serious nature; frequent to the extent of at least once in every motherhood. Judging from Whitehead's statement that thirty-seven out of every hundred mothers abort before they reach the age of thirty, serious to the extent approaching consumption in that sex, when considered as the starting point, when neglected, of various diseases of the uterus, as sub-involution, chronic metritis and endometritis leading to invalidism as well as the numerous deaths by sepsis and pelvic peritonitis.

---

*Read before the North Carolina Medical Society at Tarboro, N. C., May, 1900.

The causes of abortion are inconceivably infinite, may appear infinitely small, obscure and inevitable, or infinitely gross, bold and despicable. They may be grouped into paternal, maternal, ovular, therapeutic and criminal. The last two are induced abortion. It occurs most frequently between the ninth and sixteenth weeks of pregnancy, and at the time corresponding to the natural monthly period. It should ever be remembered that in most cases the diagnosis is a simple affair, but the practitioner will meet with no condition which at times will puzzle him to the same degree to answer these questions:

1. Has the woman been pregnant?
2. Has she aborted?
3. Is the abortion complete or incomplete?
4. Is it criminal? These must be decided before intelligent prognosis and treatment can be decided upon.

If the woman is found pregnant and abortion threatens, it is very important to know whether or not it is unavoidable, as the anodyne treatment of merely threatened abortion renders the inevitable type the more slow, incomplete and complicated. If there has been not much hemorrhage nor continuous uterine contraction, it is safe to consider the abortion as merely threatening. The patient must be put at once at complete rest and placed as soon as possible under the influence of drugs that will diminish nervous sensibility and weaken muscular action—the anodyne method, opium in the form of suppository being perhaps best, and is more generally used in this country. If the abortion can be prevented, the uterine contraction will soon cease, the bleeding stopped and the patient usually will drop to sleep.

If this result should not follow the treatment within a few hours, hope of delaying abortion should be abandoned and measures should be taken to secure complete and early expulsion of the ovum. Two dangers threaten the mother—hemorrhage and septic infection. These dangers are best guarded against and at the same time complete expulsion of the ovum secured by the proper use of the antiseptic tampon. After several hours when the tampon is removed, and if necessary renewed, the ovum will often be found adhering to it. Administration of ergot will aid in the early completion of the process of expulsion. If the abortion is surely complete, the after treatment will be simple and period of recovery uneventful. If it is found incomplete, as will most often be in the early months of gestation, the large mass of the deciduous membrane being almost certainly retained in the uterine cavity, and later the placenta being frequently left behind, the treatment will not be so simple and prognosis so satisfactory. Here it is that there is so much difference of opinion as to the proper course to pursue—whether the conservative or the active course of removing at once the substances in the uterus which may give rise to future complications. The proper course, undoubtedly, is the one corresponding to the inclination of the physician in charge. If we were all accustomed to the proper use of the curette, the future safety of the woman in every case would demand that the secundines be at once removed after the expulsion of the fœtus in every case in which such removal can be made without force sufficient to injure the woman. But it must be remembered that in the hands of general practitioners, unaccustomed to gynecological manœuvres and aseptic measures, the curette in the puerperal uterus will often prove a dangerous instrument. If this active treatment be adopted, the after care will be very simple, for the lochial discharge will be very slight and involution of the uterus rapid. But whatever course we pursue until this latter condition is perfected, the woman should be confined to bed.

If it be found that the case is one of that class in which the physician himself, for the safety of the mother, finds it necessary to bring about the premature discharge of the contents of the pregnant uterus, to demonstrate absolutely the absence of criminal intent should be his first thought. It is of some importance to know whether we are dealing with a viable or nonviable child in order that the proper method be employed. If the twenty-eighth week is approaching and it is possible to wait until the period of possible viability of the child arrives, such should be done; and, this done, the induction should be postponed as long into the viable period as it is reasonable to venture, and thus compromise between the interests of mother and child, but always giving the mother the advantage of any doubt.

In bringing about the expulsion of the fœtus by artificial methods, we should, as nearly as possible, imitate nature by securing clonic contractions of the uterus and the consequent evacuation of that organ. The process is a reflex act induced by the application of a stimulus, the impulse of which is sent along the peripheral nerves and causes the uterus to contract. This reflex act may be brought about in various ways, but many are unreliable, while others are complicated and unsafe. The reputation of emmenagogues in unsafe doses is largely based on erroneous diagnosis. The use of all drugs for this purpose is unscientific, unreliable, unsafe and, indeed, superfluous, as if the woman is pregnant, she will lose her life before the child is destroyed; if she is not pregnant, they are unnecessary. Only the ignorant laity use them. The most reliable, safest and most generally employed method is that adopted by Sir James Simpson of introducing, under aseptic precautions, a soft rubber bougie into the uterus and retaining it there by a vaginal tampon until uterine contractions are excited sufficient to expel the ovum. The dangers are sepsis, inflammation and hemorrhage. The first two must be avoided by observing strict asepsis of the external genitals and vagina and of the hands of the operator. Should there be much hemorrhage, the placental site has been probably invaded, and the bougie should be withdrawn and reinserted in another direction. If after this the hemorrhage becomes alarming, a firm vaginal tampon may be placed. This method, after the first few months of gestation, usually acts promptly and efficiently. If, however, the abortion is to be induced in the first eight or twelve weeks of pregnancy, cervical dilatation and thorough aseptic curettment is to be preferred.

If the abortion be found criminal, the indications are to guard against sepsis and hemorrhage. It is imperative for the woman's future usefulness and well-being that all cases be kept quiet in bed until complete involution of the uterus is certain. In the interest of the profession and the comman community as well, when even slight suspicion of criminal interference exists, the physician should exercise great care in examining his patient, and make complete notes of any history he may obtain from the patient and others present, and also keep complete notes of his physical examination, and the clots and portions of the embryo should be kept for inspection. If there is positive evidence of criminal abortion produced by a second party, the case should at once be reported to the proper authorities, and all evidence possible should be placed at their disposal. In this way much can be done toward the prevention of criminal abortion.

A recent question, worthy of serious discussion, arises when a woman has committed abortion upon herself. Morally it seems right that the physician should report the case in the capacity of a citizen. But, professionally, it would be the part of reasonable policy, if not morally right, to save life if possible and to keep the offender secret, this as much in the interest of future unfortunates as for the solution of the present dilemma; and, too, it seems the surest means of discouraging the development of an increase in number of professional abortionists, who have neither the interest of the future community at heart not the safety of the woman.

As to the propriety and demand for larger liberty in the induction of abortion in unfortunate young unmarried women, the time has probably not arrived for its discussion, but it has been urged that there should be a recognized difference between abortion for convenience in the married and in an unfortunate single woman, whose shame would be agonizing to herself, her kinsmen and the branded child she bore. One plainly feels the need of this difference after turning away one of these unfortunates. But while each of us with a heart, with a sense of justice, and with an active and right conscience keenly feels the need of this legal difference under similar circumstances, we must not persuade ourselves nor allow ourselves to be over-persuaded that induction of abortion, except for the life of the woman, is and must always be highly criminal against both morality and the most conservative law, and we must look for relief only in the establishment of some institution for the protection of both mother and offspring, and thus to allow them both the greatest opportunity of becoming useful citizens of the community.

THE SOURCES OF MODERN MATERIA MEDICA.

A comprehensive glance at the cast scope of our modern supply of remedial agents and at the sources from which they are obtained is of unusual interest at present because of the activity of scientific workers in seeking to extend it into still other domains. Every part of nature is now called upon to supply man with some substance or some power to administer to his wants when he is sick. The vegetable world, the mineral world, the animal world, the air we breathe, and even the unseen universal ether have each been called upon to contribute a share toward relieving suffering or calling back health to the ailing. The chief source of supply is the vegetable kingdom, and it bids fair to remain so for all time, although it is dangerous to predict in the presence of the immediate activity of research among serums, animal ferments, toxins, and anti-toxins. In a broad sense it is still proper to say that "the leaves of the trees are for the healing of the nations." Even the new synthetics are but the representatives of the vegetable world of long ago. In the application of electricity we probably find the most basic form, cosmically considered, of all remedial agents. Following this would come heat and light. These are all etherial manifestations. The first and simplest of material remedies are, of course, the elements. Among these we find sulphur, iodine, chlorine, phosphorus, mercury, and oxygen, with its allotropic form, ozone. Next above these come the mineral remedies, then the aromatic group of the synthetics, then the extracts, decoctions, and tinctures of vegetable drugs, then the active principles of these drugs, and, finally, the animal products. During the whole history of the growth of medicine there has been an incessant trend toward the securing of essences or definite principles in which are lodged the special virtues of the drugs. Practically this amounted to the obtaining of purer and purer products by the freeing of the true remedial substances from extraneous, inactive, associated bodies. This effort has been something in the nature of a protest against nature for diluting (or shall we say adulterating?) the medicines she has provided us with. The hunt for the elixir of life and for the philosopher's stone, carried on so earnestly during the Dark Ages, was the same in nature as the hunt still going on for new alkaloids, glucosides, ferments and neutral principles. It was the earlier, misdirected line of research that finally settled down to the more rational, modern one. When Sertürner, the Eimbeck apothecary, announced his discovery of "morphium" and showed that it was the active principle of opium, the first step was taken toward the unraveling of nature's medical mysteries. This sanctum sanctorum came very near being entered twelve or fourteen years earlier by Dr. Duncan, of Edinburgh, Scotland, when he produced his "cinchonin" from cinchona bark. As his product was still a mixture and not a single, crystalline principle, he lost the honor that fell to the German apothecary. It did not take long, however, to discover that even pure alkaloids do not fully represent the medicinal virtues of such drugs as contain them. Most of these drugs contain more than one alkaloid and some of them a large number. Both opium and cinchona are among the latter class. The effect of the drug is thus seen to be a resultant and not the effect of a single kind of activity. In some cases, indeed, the contained active principles are antagonistic to each other. It thus turns out that the early idea of a definite essence representing the total virtues of a drug is a myth. No such definite essences exist. In drugs like digitalis, where the active principles are not alkaloids but glucosides, the same thing is true. Here, too, the originally noted virtue of the drug is a resultant of a combination of more than one active agent, some of which, within the same drug, may be positively antagonistic. As we advance upward to the serums we observe that this condition of things is general throughout the entire field of our materia medica and that the polypharmacy that some have decried is really nature's original way of supplying us with our medicaments. To merely prescribe opium is to order a long list of active medical substances that if separately enumerated upon a prescription would lay the prescriber open to censure for excessive polypharmacy. Recently a good deal of activity has been manifested in the altering slightly of the chemical structures of various alkaloids so as to improve them in certain phases of their medical power. This is among the most recent of the sources from which the new drugs have been supplied. When the owner of a house improves it by adding a new wing, a new bay window, a new cupola or a new style of roof to it without in any way disarranging the main structure, he does for that house just what the chemist does for an alkaloid when he adds, by condensation to its molecular form, some new radical. Here man improves on nature just as the architect improves on the original design of the house to which he has made a new addition. It is in this way that dionin has been constructed from morphine and euquinine from quinine. Nor is this kind of change confined to alkaloids alone. The production of thiocol from guaiacol was a task of the same kind. In this sort of work the chemist has but patterned after nature, since the production by the plant of its higher and usually more active products from its lower and less active ones was along the same line of synthesis. In proportion to the amount of change made in the structure of a molecule, even so is the change in its properties. To alter its main, central radical is to completely alter or very markedly modify its medicinal properties. To merely change the relative places of the grouped radicals would profoundly alter its powers if the alterations of place happened to be numerous or central. Such changes, in dealing with known alkaloids, are not at present being pursued, but the minor changes that but slightly alter the structure are now creating great interest, both because of theoretical and practical business considerations. When a slight change in the structure of the quinine molecule removes completely its disagreeable bitterness without altering its fundamental shape or changing its peculiar antiperiodic qualities, it is evident that a decided and valuable improvement has been made. Such was the step made in the production of euquinine from quinine, according to the reports of world-famous theraputists.—*Merck's Archives.*

THE TREATMENT OF HEART DISEASE IN CHILDHOOD.

At a recent meeting of the Philadelphia Pediatric Society a series of papers were presented by different members dealing with the various aspects of heart disease in early life. The author of this editorial was asked to make remarks bearing upon the treatment of cardiac disease in childhood, thereby closing an interesting discussion which had dealt with congenital and acquired cardiac lesions in infancy, and with the prognosis and symptomatology of these affections. It was well pointed out by Dr. F. A. Packard, who dealt with the symptomatology of cardiac disease in childhood, that it is a condition largely devoid of symptoms until the state of the circulatory apparatus becomes exceedingly grave, and as a large part of our therapy in the treatment of cardiac lesions and their results in adults deals with symptomatology rather than with any attempt to cure the organic change which has taken place, it is evident from the start that little therapy can be addressed to the relief of conditions which in one sense do not exist. That is to say, the average child with cardiac disease does not present symptoms which need medication.

Without doubt one of the most important things which a physician can do for a child who is found to be suffering from a sufficiently grave cardiac condition to justify medical attention is to prescribe rest, which should consist not only in an abatement of violent muscular exercise, but also in the child being forced to remain at ease, if possible lying down for an hour, or even longer, two or three times a day, in order that its heart may rest as well as its body. This is a more important duty on the part of the physician than the prescription of any drugs or other remedial measures.

Another point of importance is to avoid giving the child large doses of cod-liver oil and similar substances which encourage growth and a deposition of fat. In a majority of instances of cardiac disease in childhood where the body of the child is small and dwarfed, it is so because the heart is not strong enough to supply a larger organism with blood, and if we produce an artificial condition of fat, it will necessarily increase the area of the blood-vessels, and thereby indirectly increase the labor of the heart. It is important, too, in treating these cases, both from the standpoint of treatment and prognosis, to recall the fact that puberty is the most dangerous time for patients suffering from cardiac lesions in early life. Many children pass through the early years of childhood with more or less grave cardiac lesions and with little distress, but on arriving at puberty show signs of ruptured compensation, and the majority of these children die of cardiac disease, or of some condition produced by it, at about this time of life, rarely living to adult years; although, of course, many incidents could be related in which puberty has been survived and a long life of usefulness has followed, nothwithstanding the presence of grave cardiac conditions—or rather, to speak more correctly, life has continued notwithstanding the presence of a distinct valvular lesion which has, however, been amply compensated for by compensatory hypertrophy.

Next to rest comes, of course, proper feeding. Only the most nutritious and easily digested foods should be taken by such children, and care should be taken that the digestible apparatus should at no time be overloaded even with fairly digestible food, for it is a well known fact that distention of the stomach and bowels very distinctly increases the labor of the heart.

In regard to tonics there can be little doubt that a certain group of these drugs which are rather more alterative in their action than tonic find a useful place in the treatment of these conditions. Of these, one of the first to be mentioned is arsenic. In many instances physicians make a grave mistake when prescribing for cardiac cases, in that they pay too much attention to the circulatory system instead of the heart and blood-vessels, and far too little attention to the condition of the blood itself. We cannot expect to make an improvement in the condition of the heart muscle if the blood which is flowing through its coronary arteries is impoverished, or if, in other words, the corpuscular and coloring matter is below the normal point. For this reason it is by no means a rare thing to find that patients do not benefit from the administration of cardiac medicaments until arsenic or perhaps iron has been added to their daily dose. If the case is chlorotic in type, of course iron is chiefly indicated, whereas, if there seems to be a lack of the corpuscular elements in the blood, then arsenic is still more needed. Another drug which is distinctly hematic in its influence is mercury when given in small doses. As Keyes pointed out many years ago, this drug, in the dose of 1-500 of a grain three times a day to a child, will act as a distinct stimulant to the blood-making organs, and cause an increase in the corpuscular elements of the blood. In still other cases the value of mercury in the form of blue mass or calomel, for the purpose of unloading the bowels and relieving congestion in the portal circulation, is not to be forgotten. Those of us who are familiar with the practice of English physicians remember that they are in the habit of giving drugs to affect the liver in cases of cardiac disease more than we are on this side of the Atlantic; and while they may use them perhaps excessively, we are quite confident that American physicians do not use them enough, for engorgement of the liver, if relieved, results in much benefit to the patient. Under some circumstances there can be no doubt that the administration of bitter tonics, such as cardamoms, or gentian, or small doses of quinine, is of value for the purpose of increasing the appetite, and also for the purpose of improving the condition of the mucous membrane of the digestive tracts. So, too, we must not forget the employment of syrup of the iodide of iron in the treatment of those cases of cardiac disease which also have a strumous tendency, and require both the iodine for this condition and the iron for the anemia which is commonly associated with it.

In regard to the employment of digitalis in heart disease in childhood, the writer feels confident that in the majority of cases it is not the drug of choice. In his experience it fails to produce the good results in children that we so often obtain from it in adults, even when it is given in comparatively small doses. As a rule digitalis is given in too large doses both to adults and children, because the physician does not remember the fact that it is a drug which is very slowly absorbed, slowly eliminated, or destroyed in the body, and is one which maintains its influence for a very long period of time. It is customary with those who understand the action of this drug best not to give it for a period longer than seven or eight days without stopping it for several days, knowing full well that for the next three or four days after it is stopped its physiological effects will be maintained. Certainly, one or two minims of the tincture, or at the most three minims, three times a day is a sufficiently large dose for the average child suffering from valvular disease with ruptured compensation, although, as we have already said, we have not seen it produce very excellent results in childhood. In this opinion we were glad to find that several other members of the Pediatric Society agreed with us. A cardiac tonic of very much greater value is, in our opinion, strophanthus. One or two minims of the tincture of this drug given twice or thrice a day for a considerable period of time will often produce most excellent results. It has not the effect upon the blood vessels which is possessed by digitalis, but on the other hand it must not be forgotten that in susceptible persons full doses of strophanthus sometimes produce griping pain or laxity of the bowels. Alcohol is very rarely needed in the cardiac diseases of childhood, except for the purpose of stimulating digestion and supporting the system. Its influence upon the heart is not such as would cause us to administer it as a cardiac tonic for a considerable period of time.

The last drug of which we wish to speak in the treatment of cardiac disease in childhood is strychnine. In previous editorials in the *Therapeutic Gazette* we have stated our belief that this drug was very much abused when employed as a circulatory and nervous stimulant. And further observation has confirmed us in this belief. There is nothing in the physiological action of strychnine which makes it wise for us to give this drug continuously in cases of failing heart in childhood. It goes without saying that in many instances of collapse or faintness, strychnine may be employed as a whip to urge on the circulatory apparatus to renewed endeavor until better and more constantly acting circulatory stimulants can be employed. But it ought not to be used day after day as a heart tonic; if it is so used it produces a condition of marked nervous irritability, increases the pulse-rate, and produces a fine, wiry pulse which is distinctly alarming, and which entirely disappears as soon as the drug is stopped. Of course, the same remarks hold true in regard to the use of nux vomica. We do not wish to be understood as stating that either strychnine or nux vomica ought never to be employed in heart disease in childhood. Our object is to point out that they should not be used as first-rate cardiac stimulants over a long period of time. They may be employed in very small doses as slight nervous stimulants, or for the purpose of aiding the digestion, as may any bitter tonic which also slightly stimulates the nervous system.

Lastly, it may be pointed out, although the fact is doubtless well known to most of our readers, that the mere presence of a cardiac murmur does not indicate the use of cardiac stimulants or of other forms of treatment. It is only when we have evidences of failing compensation that any cardiac medicaments are required. If the compensation is sufficient to make up for the leak which is suffered through a defective valve, there is no need of such treatment.—*The Therapeutic Gazette.*

RICHMOND ACADEMY OF MEDICINE AND SURGERY.

Regular meeting held April 24, 1900, W. T. Oppenhimer, M.D., President, in the chair; Mark W. Peyser, M.D., Reporter. *Dr. A. L. Gray* read a paper on the "Clinical Significance of Albuminuria and Tube Casts."

DISCUSSION.

Dr. Jacob Michaux said the diagnosis of some of the most obscure cases he had ever had were made clear by urinary examination, chemical and microscopical. A case in point was that of a man who had had digestive, cardiac and nervous disturbances, and who claimed to have found perculiar worms in his stools. Examination of the latter showed the worms to be maggots due to flies depositing their eggs on the exposed feces. Analysis of the urine made by Dr. Hoge revealed interstitial nephritis; and under proper treatment, the patient lived fifteen years, although at times suffering from acute exacerbations.

Dr. J. N. Upshur said that medical examiners for life insurance companies had awakened to the fact that although albumin and tube casts had been found in the urine, their presence did not necessarily bar the applicant from insurance. One company in this city had instructed its examiners (when albumin was found) to refer the applicant to an expert, who was to make urinary analyses at certain intervals and report their findings to the chief examiner. It was significant that often the first hint of kidney lesion a man had was the discovery of albuminuria by a medical examiner; or he might have had some vague symptoms, or merely suspicions, arising, for instance, from the fact of his having to get up in the night to pass water. Ten years ago he rejected for insurance an applicant, the progress of whose disease was so slow that it did not debar him from work. Treatment was of no avail. Two or three years after his rejection he was found in convulsions; and in five years, he died. Dr. Upshur said that in interstitial nephritis he looked upon albumin and casts as simply links in the chain of symptoms. He was convinced of the presence of the disease even without urinalysis, when there was high tension pulse and cardiac hypertrophy grouped with asthma and persistent nausea.

Dr. M. D. Hoge, Jr., stated that before testing urine, he always filtered it; and that he generally used three tests in satisfying himself of the presence of albumin. He had discarded nitric acid almost entirely, using in its place acetic acid, of which one drop was put in a test tube nearly full of urine and the upper third boiled. The second test was made with ferrocyanide of potassium and acetic acid; and the third with Tanret's solution. The last was a delicate test (delicate tests were sometimes untrustworthy), and precipitated oleo-resins, which were cleared up by alcohol, and albumin which was not cleared up by heating. One of the confusing conditions mentioned by Dr. Gray concerning the presence or absence of albumin was largely due to its differing behavior when arising from differing circumstances. It was for this reason that he used multiple tests. He was of the opinion that medical examiners looked at the applicant for insurance too often through the haze of tests instead of at the individual directly. In forming a prognosis, he did not depend so much upon the presence of albumin, nor of casts either alone or with albumin, for these often disappeared with treatment; but he tried to make it bear upon the prevailing habit of the patient, such as worry, labor, immoderate eating or drinking or both, etc. His reason for so doing was based upon actual experience in the treatment of the individual, and upon life insurance examinations. He was inclined to think that if albumin were constantly found, and associated with casts in chronic parenchymatous nephritis, the condition was serious, but not so much so as in chronic interstitial nephritis. In many cases of the latter disease, chemical and microscopical examinations were negative. Then repeated examinations were necessary, and the diagnosis could be furthered by watching the specific gravity and the circulatory system. Regarding the significance of casts, he attached little importance to the hyaline variety because they were so often found in the apparently healthy; but he did to the granular, especially the coarse form, in which the prognosis was always serious. The rarer forms seldom came under observation. The causes that led to albuminuria were almost as multiple as the individuals; and we were only concerned when it was due to renal disease. He did not believe in transitory, functional albuminuria any more than he did in functional heart diseases. Our methods of diagnosis were not keen enough to determine faulty mechanism in either.

REPORTS OF CASES.

Dr. R. D. Garcin reported the following: About the first of December, 1899, he was called to see Mr. L.'s infant, not more than two months old. It was bottle-fed and badly nourished, but the feature of the case, and that which called for medical aid, was convulsions, nearly continuous, varying in number from twenty to fifty in twenty-four hours. A careful examination of the child's head had revealed a nearly horse-shoe shaped depression of bone anterior to the fontanelle, nearly one and one-half inches in circumference. He gave as his opinion that the convulsions were due to cerebral pressure, with possibly some injury to the cerebrum itself at the time of birth, and that nothing but an operation would give relief; and that probably, that might not do so because of cerebral injury. Dr. Garcin stated the depression was due to the application of forceps in delivering by another practitioner. Treatment at first consisted in dietetic regulation and the administration of the iodide and the bromide of potassium in suitable dosage. The patient for about two months improved wonderfully in general health and the number of convulsions decreased to some extent, but they never ceased altogether. About February 15, 1900, the convulsions increased both in number and severity for no apparent reason, and at his request, Dr. Bosher saw the case in consultation. He concurred in every particular with Dr. Garcin, but neither of them advised an operation because of the infant's age and other conditions present. The convulsions steadily increased in number during March, and on the twenty-seventh of that month the parents requested an operation, saying that even if the infant died from it, it would be better than having it an idiot or an epileptic. Accordingly, on March 29, the little one was operated upon by Dr. Hosher at the Old Dominion Hospital. The depressed bone was removed, the wound afterward healing nicely; and up to this time (April 24) the baby had had no recurrence of the convulsions.

PECULIAR TRANSFORMATION IN THE COLOR OF HAIR DUE TO THE INTERNAL ADMINISTRATION OF COLCHICIN.

By DR. ALEX. L. HOGDDON,

Prof. of Nervous Diseases and Diseases of the Mind, Maryland Med. College.

A lady with a very beautiful head of almost snow white hair was taking some Colchicin for an affection of a rheumatic nature. Very soon after the treatment had been inaugurated her attention was called to the fact that her hair was turning to a beautiful golden hue. The treatment was stopped soon after that, but begun again lately, when the same change was again noted. We know that Colchicin is the active principle of the Colchicin autumnale or meadow saffron and that when it is exposed to sunlight it turns yellow.

HIS AWFUL BLUNDER.

Singleton—Dr. Pellet is certainly the most absent-minded man ever I saw.

Wederly—Is that so?

Singleton—Yes; he was married last week and during the ceremony when he should have placed the ring on the bride's finger he actually felt her pulse and asked her to put out her tongue.—*Chicago News.*

LOCKJAW.—Gelsemium has cured many cases of lockjaw, when all other remedies have failed. It must be given in large doses, and pushed to the extreme point of toleration.—*Med. Summary.*

THE LAW OF DYING DECLARATIONS.[1]

By M. J. SUGHRUE, Esq., Boston.

The rules of evidence relating to the competency of statements of dying persons are a branch of the law with which physicians are frequently called upon to deal. A brief recital of some phases of this branch of the law, the scope of which has recently been extended by statutory enactment, is here attempted.

It is a general rule of law that statements made by third persons are not admissible in evidence, but are within the class of hearsay evidence, and are usually excluded. To the rule excluding hearsay evidence there are some exceptions; among them are dying declarations. Dying declarations are statements of material facts concerning the cause and circumstances of a homicide made by the victim, under the solemn conviction of impending death.

There are certain other declarations of dying persons which may not be admissible under the dying declaration rule, but which may be competent as part of the *res gestæ* (which are the circumstances of the transaction) on the ground of their natural, contemporaneous and explanatory connection with the main transaction. To be admissible under the latter rule, the declarations must be so nearly contemporaneous with the main fact as to be part of the *res gestæ*, but need not have been made under a conviction of impending death. On the other hand, to be admissible under the dying declaration rule, the declaration need not be part of the *res gestæ*, but must have been made in the consciousness and expectation of immediately approaching death.

Certain declarations made in the presence of the defendant are also competent for the purpose of showing defendant's response, when charged with causing the injury done to the deceased; the admissibility of this class of evidence depends upon the conduct, presence and response of the defendant. It is not necessary to the admissibility of dying declarations that the defendant should be present when they are made. Confessions, admissions and declarations are words frequently used interchangeably, but are each technical terms of distinct significance. A confession is a statement by a person of his agency or participation in a crime. An admission is an acknowledgement by a party to a suit of the truth of some incidental fact or facts. Confessions and admissions are made by parties to the indictment or suit; declarations are made by third parties.

An examination of the law of personal statements generally would involve a broad inquiry of no special interest from a medico-legal standpoint and will not here be attempted; but that branch of this law which relates to dying declarations is alone considered.

A fuller statement of the rule relating to dying declarations than the one hereinbefore given is this: Where a defendant is on trial for homocide, the declaration of the person whom he is charged with having killed, if made while *in extremis* and under the solemnity of a conviction that he was at the point of death, and relating to matters of fact concerning the homicide which passed under his own observations, may be given in evidence.

---

[1] Read before the Massachusetts Medico-Legal Society, February 7, 1900.

The reason for the rule excepting dying declarations from the rule against hearsay evidence is that the solemnity of the circumstances under which such declarations are made, naturally constitute a guarantee of their truth equal to that which is afforded by the customary oath.

The further reason for the rule is in the necessity of the case; the victim of the homicide having passed away, and as there may be no other witness to the transaction, in order that the malefactor may not go unpunished, the strongest reasons of public policy require the admission of this testimony.[2] It was objected that the admission of this testimony contravened the constitutional provision that the accused should be confronted by his witness face to face, but Chief Justice Shaw declared that dying declarations are admissible notwithstanding the Twelfth Article of the Declaration of Rights, that every subject shall have the right to meet the witnesses against him face to face, and this rule has been affirmed so often that the question is no longer open.[3]

In order that a dying declaration may be given in evidence the following conditions must be shown: That the declarant must have been conscious of impending death; that death must have occurred; that the statement must relate to the crime and be a description of the crime itself, and its manner of commission and of the person who committeed it.

Even if the death was impending, if the declarant did not so believe, the declaration would not be competent; all hope of recovery must have been abandoned, and the declarant must be without hope or expectation of recovery.[4]

It is not necessary that declarant should be actually breathing his last; even though he lived some time the declaration is competent if made under a sense of impending death.

It has been held that statements made by the deceased while he yet entertained hopes of recovery are admissible if they were reaffirmed by him after he lost all hope.

FORM AND MANNER OF GIVING DECLARATIONS.

The form of the declaration is immaterial; it may be made orally or in writing. It is not necessary that a declaration should be expressed in words; it may be communicated by signs. It was said by Chief Justice Shaw, in Commonwealth v. Casey cited above, that "If the injured party had but the action of a single finger, and with that finger pointed to the words 'yes' and 'no,' in answer to questions, in such a manner as to render it probable that she understood, and was at the same time conscious that she could not recover, then it is admissible evidence."

---

[2] Commonwealth v. Casey, 11 Cushing, 421.
[3] Commonwealth v. Casey, 12 Cushing, 246.
[4] Commonwealth v. Bishop, 165, Mass., 148.

It will be sufficient if the declaration is taken down in writing by a bystander, and the writing then read over to the deceased, who assents to its terms and affixes his signature. But it is not essential that it be taken down in writing or that it be signed, but it will be useful so to do to preserve the evidence.

If the statement is carefully drawn and is a fair recital of the declarant's statement, it is not fatal to its competency if the exact words of the account of the case are not used. The declaration is admissible even if brought out by means of questions. It is not necessary that the declarant should be sworn. Dying declarations are admissible in favor of the accused as well as in favor of the Commonwealth.[5] But in each case the declarant must be the person who was the victim of the homicide.

CASES IN WHICH DYING DECLARATIONS ARE ADMISSIBLE.

They are admissible only in cases of homicide, and in such additional cases as have been provided for by statute.[6] By statute, abortion cases have been included.[7] Dying declarations are admissible only where the death of the declarant is the subject of the inquiry; they are not admissible to prove any other death. On an indictment for murder it is not competent to introduce the statements of another person that he killed the deceased.[8] Defendant in a case tried in New York offered to introduce a letter which might be regarded as containing a confession of another person that he had committed the murder.[9]

Where three persons are jointly indicted for murder, and one of them is tried separately, it is not competent for him to give in evidence a conversation between the other two when they were alone, inculpating themselves, and exculpating him from all participation in the crime.[10]

On an indictment for an assault with intent to murder, it was held that although the accused might exculpate himself by showing that another was guilty, yet this rule goes no farther in favor of the accused than to alow him to show another's guilt by some appropriate evidence directly connecting that person with the *corpus delicti*. Therefore mere disconnected threats and declarations of third persons are inadmissible.[11]

Where the defence of a criminal charge is that a third person committed the offense, the confession of such third person, made after the offense and not part of the *res gestæ* is not admissible in evidence.[12]

---

[5] Commonwealth v. Bishop, 165 Mass., 148.
[6] Commonwealth v. Thompson, 159 Mass., 56.
[7] Statute of 1889, chapter 100, Laws of Massachusetts.
[8] Wharton on Homicide, Section 603.
[9] Greenfield v. People, 85 New York, 75.
[10] United States v. Douglas, et al., 2 Blatchford, 207.
[11] State v. Baudet, 53 Ct., 536; West v. State, 76 Ala.

The testimony of the declarant may be discredited as that of a witness taking the witness stand and testifying. It may be shown that the declarant was not mentally capable of making a statement, that his reputation for truth was bad. The statement of the dying person must be of matter competent; it must not be merely an expression of opinion, it must be a statement of facts which could be testified to if the declarant lived and was a witness at the trial.

It is competent for the defendant to introduce testimony to show that the deceased has made contradictory statements, and it is competent for the government to introduce testimony corroborative of the dying declaration.

In passing upon the weight to be given to dying declarations the jury have a right to consider all the circumstances under which it was made, and all the conditions by which the dying person was surrounded, and the state of mind of declarant, as shown by all that was said and done. Conduct, deportment, condition, all should be noted by the person who is to be a witness. Declarant's conduct in saying farewell to his relatives, in making such provision as is made by persons about to die; if the declarant is a Catholic, if he receives extreme unction, this is of importance as indicating the state of mind. It will be found a most useful practical rule in these cases first to ascertain the state of mind of the dying person, and after that an expression by him that he has no hope of recovery, then to listen to a recital of the story of the crime.

It is because of a failure to proceed in this way that physicans frequently obtain an account of a crime which cannot be used in evidence, and it is more often because of inadvertence than want of knowledge; but the result is equally disastrous so far as a successful prosecution is concerned. Particularly is this true in abortion cases, in many of which, apart from the evidence obtained at the autopsy, there is no testimony save the dying statement of the person operated upon, which by reason of the carelessness or ignorance of the person hearing the statement is worthless evidence.

Another form of declaration of deceased persons made competent evidence by a recent statue which will be likely to call physicians into court to some extent hereafter is the law passed in 1898, Chapter 535 of Massachusetts Laws; this will be used in civil cases only; it is entitled, "An Act Relative to the Declarations of Deceased Persons." It reads: "No declaration of a deceased person shall be excluded as evidence on the ground of its being hearsay, if it appears to the satisfaction of the judge to have been made in good faith before the beginning of the suit and upon the personal knowledge of the declarant."

In closing this paper it is proper, perhaps, to say that in speaking on the occasional failure of some person to comply with the exact legal requirement of the particular situation, it is with no desire to criticise, but on the contrary with a full recognition of the aid received from physicians and also of the fact that in most instances every requirement of the rules of evidence is complied with. The abortionist, the poisoner and the murderer would often have very little to fear from the best efforts of lawyers seeking to prevent crime were it not for the skill, the watchfulness and the fearlessness of the trained minds which trace the evidence of subtle poison or the course of the murderer's bullet. Without this assistance, in many instances the law would be helpless, and the fact that detection is made certain by the attainments of these scientific men restrains the criminal by bringing close to him the certainty of detection.—*Boston Medical and Surgical Journal.*

---

[12] Peck v. State, 86 Tennessee, 259.

MANAGEMENT OF INSANITY.

In Landesmann's work "Die Therapie an des Wiener Klinik" (Vienna, 1900), we find that the following regimen and prescriptions are employed at Professor v. Krafft-Ebing's Clinic for Psychiatry:

For commencing insanity, which is variously regarded by the inexperienced as moodiness, lovesickness, hysteria, nervousness, etc., the patient should be sent to a sanitarium or upon a short journey with a companion. Large cities should be avoided, as should, also, health resorts, long journeys, cold hydrotherapy, etc. Warm baths and packs at night, with galvanization through the head, tend to produce sleep. Trional, paraldehyde and amylene are all used as hypnotics.

For defective tone of the cerebral vessels, Leiter's coil to the head, mustard to neck, pediluvia. In melancholia, psychic hyperæsthesia and præcordial anxiety, opiates. Contraindicated are low diet, venesection, purgatives, cold water cures, etc.

For fully developed insanity, leeches, cups, etc., are indicated in certain forms only, viz.: Acute delirium, psychoses from suppressed menses and climacteric. Cold compresses over the heart will quiet that organ. Digitalis and strophanthus are sometimes employed for excessive activity of the heart. To dilate the cerebral vessels warm full baths, rubbing down with damp towels, purgatives. To contract the cerebral vessels apply cold to the head, mustard baths, large mustard plasters; many drugs are also useful here—ergotin especially, belladonna, opiates (small doses), caffein, nux vom., etc. Hallucinations are treated with morphine.

TYPHOID FEVER.

The physiologic treatment of typhoid fever is summarized by Dabney as follows:

1. Clean intestines by mild cathartic. 2. Stimulate the vasomotors by the regular application of cold water with constant friction. 3. Colonic flushings. 4. Abundance of cool water to drink. 5. Clean sheets, clean gown daily. 6. Sunlight and air in abundance. 7. Spare

and readily assimilable diet at long intervals. 8. Eternal vigilance for complications. 9. Careful study of pulse and temperature. 10. Never give any remedy that increases vasomotor paresis; the coal-tar series in particular are to be avoided. 11. Avoid the use of all stimulants as a routine practice. I refer especially to alcohol, strychnin, nitroglycerin, and ammonia. There are times when we may need stimulants badly, but the average cases, if properly treated, seldom need them. The use of digitalis, though indorsed by many good men, I deem unphysiologic, and at times positively dangerous in this disease.—*Virginia Medical Semi-Monthly.*

TREATMENT OF PROSTATIC HYPERTROPHY.

Parker Syms, M.D., of New York, discussed this subject in a paper before the Section on Surgery and Anatomy of the American Medical Association.

In considering the symptoms he spoke of the almost invariable prominence of dribbling, due to the dilated bladder, and of the frequency of micturition. Almost invariably a chronic cystitis was present, which, from time to time, was provoked to acute exacerbation. Formerly—indeed, until very recently—catheter life was the ultimate and unhappy ending of these cases. Now, however, two alternates had come into the field: (1) Prostatectomy, and (2) prostatomy, or Bottini's operation. Dr. Syms made only a passing allusion to the latter, saying that he felt that for certain cases it had a brilliant future. Of the former he spoke at length, devoting most of his considerations to a new and interesting technique. That the death rate was high in this operation he could not deny, but he was convinced that this was due very largely to the extreme physical and mental depression present in all cases operated on. For this reason the operation should not be undertaken as a last resort, but practiced rather at the inception of the hypertrophy, or, at any rate, just as soon as the habitual use of the catheter became necessary. Physiological old age, however, contraindicated operation. Of technique he spoke as follows: In 1898 he advocated the perineal route, crowding down the prostate through a suprapubic incision. Now, however, he had given up opening the abdomen, using by preference a small opening in the membranous urethra. Through this, and into the bladder, he introduced a rubber bulb, tied to the end of a soft catheter. After introduction, the bag was filled with water and the tube was clamped. Traction on this simple device readily grew the prostate into the perineal wound.—*Medical Record.*

Heart Tonics.—Dr. I. N. Upshur, of Richmond, Va., discussed this subject before the Section of Materia Medica and Therapeutics of the American Medical Association as follows: He said that digitalis was an unsatisfactory and uncertain remedy because its action could not be controlled. The same was true to a less degree of convallaria. Sparteine was of great service in weak and flabby hearts. Strophanthus was very much superior to digitalis. It was more prompt in its action and more permanent in its effects. When combined with strychnine it was a most valuable agent in fevers and weak states of the system. Atropine was of especial value in cases of cardiac insufficiency accompanied by bronchorrhœa. Caffenie was of considerable service when the kidneys were affected. Strychnine was our most valuable and reliable heart tonic. If given before chloroform anæsthesia it prevented cardiac failure. It was invaluable in the case of a weak heart from any cause. Nitroglycerin was not a heart tonic. It was contraindicated in weak states of the system, and especially in surgical shock. It was a motor depressant, and its too free use was fruitful of harm. In the late stages of typhoid, opium seemed to have a true tonic effect on the heart. Cactus grandiflorus was useful in cases of rapid heart due to tobacco poisoning.—*Medical Record.*

PREVENTIVE TREATMENT OF MIGRAINE.—Dr. E. W. Mitchell, of Cincinnati, Ohio, discussed the various theories that had been advanced to explain the cause of this affection in a paper read before the American Medical Association. The theory of auto intoxication had the most adherents. The paraxanthin theory had not been verified. He believed in an absolute withdrawal of all red meats. These attacks could generally be prevented by the use of the following mixture, to be taken each morning before breakfast: Sodii sulph. and sodii phosph., of each ʒ ii.; sodii salicylate, gr. x.; tr. nux vom., miii.; water, **℥ iv.** This was best administered in seltzer or Vichy.

Dr. A. L. Benedict, of Buffalo, said that as a general rule the amount of hydrochloric acid was very much diminished in the gastric secretions of these patients. He advised that it should be administered as a routine treatment.

Dr. I. N. Upshur, of Richmond, thought that the disease was in almost every case due to nerve strain. It was caused by dietetic disturbances in only a very small percentage of the cases. In many of these cases during an attack the fæces were clay colored, and this was due to disturbances in the liver. Full doses of sodium phosphate in hot water on an empty stomach for several days had given him the best results.

Dr. J. M. Allen stated that in many of these cases in which he had performed autopsies there was a chronic ulceration of the common bile duct, which, when inflamed, penned up the secretions in the gall bladder, and then they were diffused throughout the system.

Dr. Mitchell, in closing, said that the white meats were less likely to cause fermentation than the red meats, and therefore were to be preferred.

RECOVERY OF A CASE OF CANCER PRONOUNCED INCURABLE.

Adamkiewicz, one of the greatest authorities on cancer, and a pioneer in the matter of employing a serum in the treatment of this disease, has recently announced what he claims to be the first cure upon record along this line of therapeutics (*Klinisch-therap. Wochen.*, March 25, 1900.)

A patient was suffering from cancer of the peritoneum. The diagnosis had been made by Professors Pawlik and Riedinger—inoperable cancer, Adamkiewicz first saw the woman in 1895. Cachexia and ascites were the most prominent symptoms, and the patient was bedridden. After withdrawing a large amount of liquid by tapping, a number of tumors, many of which were large, could be felt in the peritoneum, with further localization in the liver and right ovary.

Adamkiewicz, in consultation, instructed the attending physicians in the use of his serum, *cancroin*, which has been sufficiently described in medical literature. He confesses that he did not anticipate a favorable report from the doctors. But after having practiced five injections of cancroin, the medical attendants reported a surprising improvement in the ovarian tumor, which had been reduced in size one-half. Close upon this report followed another to the effect that the peritoneal tumors were beginning to disappear, with the statement that an epochal discovery had been made by the author. Not long afterward the once bedridden patient visited Adamkiewicz, and the latter was able to convince himself that all the tumors, some of which were as large as the fist, had entirely vanished, while the general condition was perfect. At last advices the woman was still healthy, three years after the episode of the cancroin treatment.

CYSTS OF THE EXTERNAL AUDITORY CANAL.

Dr. Louis S. Somers, of Philadelphia, in the *Annals of Otology, Rhinology and Laryngology*, Vol. IX. No. 1, reports a case of cyst of the external auditory canal occurring in the course of suppurative otitis media of some months' duration. The cyst was attached at the junction of the cartilaginous with the osseous portion of the auditory canal on its superior surface, and was removed intact by snare under cocain anæsthesia.

Cystic tumors of the canal may originate in two ways: First, by the gradual accumulation within a pre-existing gland cavity of the products of its own secreting membrane. Secondly, by independent formation in the tissues through softening and liquefactive changes, the material so produced compressing the cells in the immediate proximity, and these undergoing more or less fibroid change to form ultimately the cyst wall. A cystic tumor may also originate in rare cases by the formation of a fibrous tissue wall around any foreign body, such as a mass of coagulated blood, central liquefaction taking place.

GAILLARD'S MEDICAL JOURNAL.

A MONTHLY JOURNAL OF MEDICINE AND SURGERY

Scientia et Veritas Sine Timore.

PUBLISHED BY THE NEW YORK MEDICAL PUBLISHING CO.,

106 William Street, NEW YORK.

All communications, of either business or editorial character, should be addressed to Gaillard's Medical Journal, 106 William St., New York.

Articles for publication will be received with the understanding that they are contributed exclusively to this journal. Reprints will be furnished at actual cost, orders for which should accompany the manuscript. Authors of accepted articles may receive twelve copies of the issue in which they are published. Necessary illustrations will be furnished without expense to authors when suitable drawings or photographs are furnished.

EDITORIAL.

Importance of a More Intimate Knowledge of Appendicitis Upon the Part of the Profession.

The full and frequent discussions of appendicitis in our medical societies for some years past would lead us to think that the subject had become threadbare; but it must be remembered that only through these discussions have we arrived at a knowledge of the true status of the question.

Clinical facts, bedside and dead-house observations by keen, careful men have formed the bulk of these records; but it is well, from time to time, for us to carefully weigh the boiled-down, accumulated evidence.

In this issue of GAILLARD we present important matter both from the surgical and medical side of this problem—papers from Dr. Robert T. Morris, of New York, who is properly considered now the leading authority on appendicitis, viewed from the standpoint of its pathology, diagnosis or operative interference, and from Dr. I. N. Love, of St. Louis, an experienced practitioner and teacher, who discusses it from the medical standpoint.

We will all have to admit that while the rank and file of the profession are willing to grant that appendicitis is a surgical lesion, yet grave differences of opinion still obtain as to the proper time to operate.

The papers above referred to will well repay perusal, A western exchange (*Medical Review*) recently devoted an entire issue to the discussion of "Normal Appendectomy"—the removal at birth of the appendix vermiformis to prevent subsequent trouble.

The views of scores of the leading surgeons of the United States were presented, all, as a matter of course, opposing such operation; the verdict was unanimous, as it should have been. The discussion of the propriety of removing any other part of the infant anatomy in spite of the dangers involved, with a view to prevent its becoming diseased later, should have followed—say, for instance, the baby itself.

* * * *

It is wonderful how tenaciously the laity cling to the idea that grape seeds and other foreign bodies are the disturbing factors in inflammations of the appendix vermiformis, when, as a matter of fact, it is the rarest exception for any foreign matter to be other than merely incidental to the real disturbance. Among grape and other fruit eating people appendicitis is rarely found, and it has been very properly suggested that such diet is rather prophylactic than otherwise.

Constipation and general intestinal irregularity are the most potent factors, after all, in this lesion, as in many others.

Doctors' Contributions to Current Literature, Medical and General.

It is sometimes said and often thought by members of our profession that too much is written and printed, but this is truly a mistake, for as long as that which is written is true and honest, the record of observations carefully made, the conclusions of conscientious workers, the publication of the same is for the good of the profession. He who sees a thing or thinks a thought and contributes it to his fellows is the generous worker; and even though there be much repetition, a truth cannot be repeated too often.

As a rule, the ones who object to the numerous contributions to medical literature are either too lazy or incompetent to write. Keep a case book, doctor, and carefully record your bedside observations and at proper times present the same to your fellows.

Think out your thoughts carefully and let them go for what they are worth, remembering that if you wait until you can present that which you believe to be absolutely original, you will wait a long time, as there is but little really original in this world except "original sin," Robert Loveman truly says:

> "Nations and men may pass away;
>   A fragrant thought can never die;
> The soul beneath its potent sway
>   Ascends on high.
> For if thy dear verse doth hold
>   Fast in its heart one truth sublime,
> There shall it gleam, a star of gold,
>   And outlive time."

The American Academy of Medicine on Specialism and Advertising.

At the recent meeting of this body, at Atlantic City, the special committee appointed to consider specialism and advertising reported as follows:

(1) Specialism is not only desirable; it is unavoidable. (2) It is proper for a physician to seek to perfect himself in the direction of his greatest ability, even to the neglect of some other field of practice. (3) A specialist as well as the general practitioner may have a practice directly with his patients, or indirectly through consultation. (4) In his direct practice, a specialist ought not to be an exclusivist. In his consulting practice, a specialist stands in a different relation to his fellow-physician than do general practitioners in consultation. He is rather a coadjutor than a consultant. (5) Specialism *per se* does not create discord in the harmony of professional intercourse. (6) The time to enter upon a specialty cannot be predetermined by rule.

As to advertising: (1) No physician can escape advertising. (2) The true physician serves humanity first, the earning a livelihood being secondary. (3) Any method of advertising reversing this order is not to be commended. (4) Any method of advertising which only seeks to inform the public that the advertiser is ready to be of service is permissible. (5) The above principles are fixed, their application varies with the environment. (6) Regulations restricting advertising should be equal in their action.

This very important body might have summed up the specialism problem as follows: Specialism is desirable, unavoidable, but can only properly be founded on a broad field of general experience and observation of not less than ten years—better twenty.

The advertising question, boiled down, is: Every worker must announce himself ready for business, and as long as he remains in business he must let the community know it; but his work is his best advertisement. All advertising must be within the limits of good taste. Breaches of good taste are unforgivable but not criminal.

Department of Ethnology and Archæology in the Pan-American Exposition at Buffalo in 1901.

All of the Americas are interested in the coming Pan-American Exposition, and the people of the United States will be specially drawn to Buffalo during the months from May to November, 1901. Buffalo's close proximity to Niagara Falls will draw the globe trotters of the world to her doors, even though her Exposition were unattractive; but those familiar with the wonderful enterprise of the "Great Lakes City" know full well what the wonders of the Pan-American Exposition will be.

The medical profession will feel a deeper interest in the event than before on reading the correspondence which follows from Dr. A. L. Benedict (the prize essayist of the American Medical Association for 1900), superintendent of the Department of Ethnology and Archæology.

Buffalo, N. Y., July 3, 1900.

Editor GAILLARD'S MEDICAL JOURNAL,
New York City, N. Y.:

DEAR SIR—The Pan-American Exposition has seen fit to entrust the care of the Department of Ethnology and Archæology to a practicing physician. I should be very glad if you would allow me to reach your readers with the following request for assistance:

Many members of the medical profession are interested in the study of American ethnology and archæology, and not a few have valuable collections of Indian relics and skeletons from Indian graves. Those not directly interested in this study are so circumstanced as to be aware of the hobbies of their neighbors, and could doubtless furnish the address of collectors. I should be greatly obliged for information and for the loan of collections for the use of this department of the Exposition. Exhibits which represent study in some special line of American ethnology and archæology will be particularly suitable.

Very truly yours,
A. L. BENEDICT,
Superintendent of Ethnology and Archæology.

Mississippi Valley Medical Association—Asheville Meeting, Oct. 9 to 11, 1900.

This second largest medical association, composed of not only many of the best physicians of the great Mississippi Valley, but many of the leaders in the country at large, holds its twenty-sixth annual meeting, as above announced, at the delightful watering place, Asheville, N. C. But we are in error. Asheville is not a "watering place," but a glorious "breathing place" up in the "Land of the Sky," in the heart of the mountains of North Carolina. This plan of holding medical meetings at "health resorts" is most excellent, for it helps the members doubly—improves their health and gives them definite, valuable knowledge of the place, which can but be of service to their patients.

We are in receipt of the following circular letter of information which further emphasizes the points made above:

July 6, 1900.

DEAR DOCTOR—Your attention is called to the twenty-sixth annual meeting of the Mississippi Valley Medical Association, which will be held Tuesday, Wednesday and Thursday, October 9, 10 and 11, next, under the presidency of Dr. Harold N. Moyer, of Chicago. At a meeting of the executive committee, held at Atlantic City, June 6, the following were chosen to deliver the annual addresses: Dr. I. N. Love, of St. Louis, the address in medicine; Dr. C. A. Wheaton, of St. Paul, Minn., the address in surgery. The mere mention of these names is guarantee sufficient that the association will hear only the best.

Negotiations are in progress by which the members of the association may obtain a one-fare rate for the round trip for this meeting. The Southeastern Passenger Association has already granted this rate, and it is believed the Western and Central Passenger Associations will concur. Due notice of this will be sent later.

It is earnestly requested that those desiring to read papers will send their titles to the secretary within the next thirty days. It is also requested that a brief synopsis of the paper of not less than twenty-five words accompany the title.

The association will not be divided into sections at this meeting. The headquarters will be at the Battery Park Hotel, at which place the sessions will be held.

We trust you may be able to attend and read a paper at the next meeting, which promises to be a most enthusiastic and successful one.

Those who will read papers are requested to hand them to the secretary, typewritten, for use of the publication committee. Fraternally yours, HENRY E. TULEY, Secretary.

Death of Dr. Truman W. Miller, of Chicago.

In the death of Dr. Truman W. Miller, May 31, 1900, in Chicago, the medical profession of the West lost a good, strong man. An attack of grip was followed by blood poisoning. He was president of the Chicago Polyclinic and Professor of Surgery in that institution. He was consulting surgeon to St. Joseph's and the Alexian Brothers' Hospitals, surgeon-in-chief to one or two railroads, and for many years was attending surgeon of the Cook County Hospital. Dr. Miller was born in Seneca County, N. Y., March 2, 1840. He took his first course of studies at Obart College, Geneva, N. Y., and completed his education at the College of Physicians and Surgeons, New York.

Dr. Miller was also a member of the faculty of Rush Medical College, Chicago, and of the Board of Trustees of the American Medical Association.

* * * *

Dr. Miller's death and that of his colleague Dr. John B. Hamilton, and numerous others that come to the mind of the writer, emphasize the importance of the members of our profession, who become infected surgically, even in an apparently trifling way, realizing that all forms of infection are a severe test of one's physical equipment, and demand prompt heroic measures to avoid immediate dangers, and a recognition of the fact that ever after they are crippled in their general makeup and must govern themselves accordingly along the lines of retrenching, doing less work and more carefully guarding themselves.

Heroic Treatment for Soft Corns Between the Toes.

Physicians should be more fully informed upon disturbances of the feet. Too often they brush aside these complaints and leave the victims to their own awkwardness or the tender mercies of itinerant and often ignorant chiropodists. We should realize that owing to neglect of proper cleanliness the feet may become potent dangers in the direction of general infection where self-treated or improperly handled by others.

In discussing recently, at the New York Post-Graduate Medical College, the subject of soft corns, Dr. A. M. Phelps, the eminent orthopedic surgeon, said:

"We all frequently meet with cases of soft corn, occurring particularly in the working classes, between the toes. They are extremely painful, crippling the patient and rendering life almost unendurable. These cases come to the hospital and ask to have the toes amputated. Such corns are usually treated conservatively, and are cured, but immediately relapse. Deep sloughing ulcers are frequently seen.

"A simple procedure which I have followed many times during the past few years answers admirably and saves the toe. It consists in removing all of the soft tissues on the inner side of two of the toes, removing the corn, and stitching the two toes together, as seen in the figure. This procedure does not in the least impair the usefulness of the foot; whereas, the removal of the toe must necessarily do so to a certain extent.

"Patients upon whom I have operated in this manner have expressed themselves as entirely satisfied, and I am certain that if I had a soft corn that caused me much trouble I would have no hesitancy in having the operation performed, and the toes 'webbed.' The nail of the little toe should be removed."

Dr. Charles A. L. Reed, President of the American Medical Association.

The members of this association are to be congratulated on the election of Dr. Reed as president. In the prime of a vigorous manhood, he is well equipped to serve the association, and that should be the governing thought in the selection of all officers of such important bodies. The time is past when selections should be made on sentimental grounds alone.

The *Medical Review of Reviews* of New York very tersely and truthfully says:

"The American Medical Association has seldom been more fortunate in the selection of a presiding officer than in the choice of Dr. Reed, of Cincinnati. He was not elected because of his being an Ohioan, but for the reason that he stands for all that is best in the profession—culture, skill, laudable ambition, and professional unity.

"Add to these a vigorous and genial personality, a splendid reputation in two hemispheres, and a popularity seldom enjoyed by a man of his age, and we find in the president of the association for the coming year abundant promise of a successful administration. If through his influence some of the 'dead issues' of former years shall be swept away, his incumbency of this high office will not have been fruitless but productive of inestimable benefit to the entire profession of the country."

Constipation is the root of nearly all internal physical ills. Self-poisoning bears the same relation to physical sorrow that self-love does to moral unhappiness.

EDITORIAL COMMENT.

It seems that during the month of April, 1900, the temporary editor of GAILLIARD'S MEDICAL JOURNAL wrote matter which was interpreted as personal by Dr. Carleton Simon, of this city, and which was offensive to him.

It affords us great pleasure to say that we regret and repudiate the matter referred to. Neither the editor nor the publisher of this journal believes in personal journalism, least of all, that which is or can in any way be interpreted as unkind.

While believing that the Doctor has exaggerated the importance of the matter, we trust most sincerely that he will forget it as thoroughly as we regret it. We beg to assure him that complete forgiveness is ever grateful to us.

Life is too short to worry about trifles, or anything else, for that matter. Give your work good, honest thought in advance; then let it go at that. Fret and friction are the greatest enemies to progress. Earnest, properly directed effort, with a judicious lubricant, favor facility of movement, whether one is attempting to pass the "Rubicon" or a catheter.

Speaking of passing a catheter, or indulging in any procedure calling for a lubricant, Lubri-Chondrin is unequaled.

Up in Webster, Mass., a few days ago, little Theodore Plausse, in absence of parents, who were at church, played with matches not wisely but well. His clothing was soon ablaze and his grandfather, who was a Christian Scientist, did not interfere, but prayed, and little Theodore was buried two days later. Grandpa Plausse was consistent, to say the least. Non-interference in cases of diphtheria and other infections is quite as unintelligent and unkind as non-interference in a case of fire; but in all such cases the State should interfere and punish those who neglect their duty as accessories to murder or manslaughter; and so it is to be hoped that as little Theodore is in his grave his deluded ancient relative is where he belongs—in jail.

The merry mosquito and malaria may be related, but the chances are that the irritating insect may carry the plasmodium from one individual to another, but that he breeds it doth not yet appear.

Let it not be forgotten that coal oil freely distributed in stagnant bodies of water is said to destroy mosquitos.

GAILLARD'S MEDICAL JOURNAL.

VOL. LXXIII. NEW YORK, SEPTEMBER, 1900. No. 3

CONCLUSIONS REACHED AFTER A STUDY OF TYPHOID FEVER AMONG THE AMERICAN SOLDIERS IN 1898.*

ORATION ON STATE MEDICINE BEFORE THE FIFTY-FIRST ANNUAL MEETING OF THE AMERICAN MEDICAL ASSOCIATION, AT ATLANTIC CITY, N. J.,

JUNE 5-8, 1900.

By VICTOR C. VAUGHAN, M.D., Ann Arbor, Mich.

Professor of Hygiene in the University of Michigan; Late Major and Division Surgeon U. S. V.

It is well known that typhoid fever prevailed extensively among American soldiers assembled at State and national encampments during the brief war between the United States and Spain in 1898. In August of that year a board, consisting of Major Walter Reed, U. S. A., Major E. O. Shakespeare, U. S. V., and the writer, was appointed at the request of the Surgeon-General of the U. S. Army, for the purpose of ascertaining the causes of the existence and spread of typhoid fever in the national encampments, and of suggesting means of its abatement. In accordance with instructions, this board visited the national encampments and inspected most of the regiments. While doing this, we interviewed medical and line officers, and obtained as far as possible the sanitary and medical history of each regiment. After completing this tour of inspection, we spent about eighteen months in going over the medical records of these commands. In this work we have accumulated a vast amount of information, which we have embodied in our final report to the surgeon-general. Since much of this information may be useful to the profession, and as the report is not likely to be published soon, I have concluded that I can not do better than present some of the more important results reached in this investigation. In doing this, I wish to state that I am responsible for any failure that I may make in these statements, as this paper has not been submitted to my colleagues on the board. It will be necessary for me to condense my remarks in the form of conclusions, stated somewhat dogmatically, and dependent on the full report for further elucidation. These conclusions I will proceed to give:

1. Every regiment in the United States service in 1898 developed typhoid fever.—This is true of both volunteer and regular commands.

---

*Journal A. M. A.

I am aware of the fact that some regiments have claimed freedom from typhoid fever, and it is true that the sick reports of more than one command fail to show any evidence of this disease; but by carefully tracing the sick to hospitals, we have been able to find one or more cases of typhoid fever in every regiment. The claim is made by an assistant-surgeon of one of the Pennsylvania regiments that there was not a case of typhoid fever in his command, but the records of the Philadelphia hospitals show that certain cases sent from this regiment proved to be typhoid fever. It is true that this regiment, which was engaged in guarding powder works in New Jersey and Delaware. had relatively few cases of typhoid fever, but it did not altogether escape this disease. Official statements that certain commands escaped typhoid fever have been made. Gen. H. V. Boynton, chairman of the Chickamauga and Chattanooga National Military Park Commission, in his report to the Secretary of War, under date of October 17, 1899, makes the following statement:

> At the time the camp was abandoned, it is true that there was much sickness, and that a condition approximating panic prevailed with many officers and surgeons. There were large numbers of fever patients in the hospitals. Seven battalions of troops—four colored, under Col. E. L. Huggins, of the Eighth United States Volunteer Infantry, and three white, under Col. L. D. Tyson, of the Sixth United States Volunteer Infantry—were left at the camp. The strictest sanitary measures were at once adopted by these officers, and were also rigorously enforced, both as to the camp sinks, the cooking of food, and the eating of trash, and the drinking of slop. The result was that, notwithstanding they were encamped in the same sections of the park (Chickamauga) where the departing troops had been not a case of fever developed in either of these forces; nor did a death incident to camp disease occur.

This positive statement from one so high in authority needs careful investigation. Moreover, it will be of special interest to inquire somewhat in detail as to whether or not these regiments, by the practice of strict sanitary precautions, were able to encamp in Chickamauga Park, which at that time was widely contaminated with matter specifically infected with typhoid fever, without developing one or more cases of the disease.

The Sixth U. S. Volunteer Infantry assembled at Knoxville, Tenn., where it was mustered into the service of the United States on July 14, 1898. It remained in this camp until July 31. While at this place it had a most excellent supply of water—that furnished West Knoxville. Fecal matter was deposited in sinks which were fairly well policed, the contents being covered with dirt and lime twice a day. The health of the command seems to have been good, but soon a case of typhoid fever appeared. Very shortly after the regiment had been mustered in, one man, an athlete, who had been traveling about the country, complained of being ill and was granted sick furlough. This proved to be a case of typhoid fever. This command reached Chickamauga Park about 11 P. M., July 31. It rested for the night near the Second Brigade of the Second Division of the Third Army Corps. The next morning it was moved near the water-tower, on ground quite remote from that occupied at the time or previously by any command. On the morning of August

1, eight men reported at sick-call, but none of the cases proved to be serious. I have studied the records of this regiment carefully, and find no evidence of typhoid fever in it after it reached Chickamauga, until August 24, when a private from Company C was sent to the hospital of the First Division of the Third Army Corps. This case was diagnosed "malaria," and the man remained in the hospital only five days when he was discharged on furlough, but at the expiration of the furlough he was unable to return to his regiment. The probability is that this was a case of typhoid fever. On August 27, another case of so-called "malaria" was sent to the same hospital, and was furloughed four days later. This man also was unable to return to duty when his furlough expired. From September 1, until the regiment left Chickamauga, numerous cases of recognized typhoid fever were sent from this command to the Sternberg Hospital. One man, admitted to this hospital on September 1, died September 5, and was probably in the second week of the disease at the time of death. This man was a sergeant and had never failed to appear at sick-call in the morning with the men from his company. He expressed solicitude about himself two days before he was sent to the hospital, or, to be more explicit, on August 29. From August 24 to October 4, the date when this regiment left Chickamauga, 98 cases of protracted fever were sent from this command to Sternberg Hospital; 86 of these were diagnosed as typhoid fever, 11 as malaria, and 1 as dysentery. The man who was admitted to the hospital September 1, and who died September 5, was the first case of recognized typhoid fever occurring in this regiment after it reached Chickamauga. The appearance of this case caused considerable solicitude, and the regiment again changed its location, and its water-supply. However, as has already been seen, typhoid fever did not abate. On October 4, as has been stated, this regiment left Chickamauga and proceeded to Porto Rico. Typhoid fever continued to develop during the voyage and after reaching the island.

The Eighth U. S. Volunteer Infantry consisted of a regiment of colored troops, recruited largely in Kentucky, and was stationed at Fort Thomas until it went to Chickamauga Park on October 8. In the August report of this command, there is 1 case of recognized typhoid fever. In the September report there are none and only 5 cases diagnosed as malaria, while only one of these was off duty for more than ten days. The October report shows 2 cases of recognized typhoid fever. The initial date of one of these was October 1, before the regiment left Fort Thomas; the initial date of the other was October 25, while the regiment was in Chickamauga Park. The November report shows no cases of recognized typhoid fever; but 2 diagnosed as malaria were of more than three weeks' duration, and 6 of fever, undiagnosed, are reported, and none of these patients had returned to duty up to December 31, 1898.

2. More than 90 per cent. of the volunteer regiments developed typhoid fever within eight weeks after assembling in the State encampments.

It is impossible to fix any exact date on which the several regiments assembled at their State encampments. However, as the first call for troops was issued April 20, 1898, it must follow that at the earliest all regiments assembled at State encampments during the last week of that month. Bearing this in mind, our report will show that the great majority of the volunteer regiments developed one or more cases of typhoid fever within eight weeks after assembling at the State encampment.

3. Most, probably all, of the regular regiments developed typhoid fever within less than eight weeks after going into camp.

The following table shows the date of going into encampment and of the appearance of first cases of recognized typhoid fever in certain regular regiments:

Command.	Date of Going into Encampment.	Date of First Case of Recognized Typhoid Fever.
Second U. S. I.	April 22, 1898	May 28, 1898
Fourth U. S. I.	April 22, 1898	May 18, 1898
Sixth U. S. I.	April 22, 1898	May 19, 1898
Seventh U. S. I.	April 24, 1898	May 26, 1898
Thirteenth U. S. I	April 23, 1898	May 8, 1898
Sixteenth U. S. I	April 22, 1898	May 20, 1898
Twenty-second U. S. I.	April 22, 1898	May 29, 1898
Twenty-fourth U. S. I. (col.)	April 20, 1898	May 28, 1898
Twenty-fifth U. S. I. (col.)	April 20, 1898	May 28, 1898

When war with Spain was proclaimed, the total strength of the standing army of the United States was 27,000 officers and men. These troops were scattered at about 100 military garrisons. All of the soldiers were well housed, and their quarters were, from a sanitary standpoint, in good condition. At each garrison, the water-supply was above suspicion, and the disposal of waste was such as not to endanger the health or the life of the soldiers. There was no epidemic at any post, and the army was reasonably free from infectious diseases except those of venereal origin. The number of cases of typhoid fever among the 27,000 officers and men during the first four months of 1898 was distributed as follows: In January, 9 cases with 1 death; in February, 3 with 1 death; in March, 4 with no deaths; in April, 6 with 1 death. During the last week of April and the first week of May, 1898, the regular regiments were assembled in national encampments and placed under canvas.

4. Typhoid fever not only appeared in every regiment in the service, but it became epidemic, both in the small encampments of not more than one regiment, and in the larger ones consisting of one or more corps.

The statement has been made that the epidemics of typhoid fever in our national encampments in 1898 were due to crowding together large numbers of men. The Third North Carolina Volunteer Infantry, at its isolated post at Fort Macon, N. C., developed typhoid fever before it was sent to Knoxville, where it became a part of the Second Division of the First Army Corps.

When we reached Knoxville, Tenn., in our round of inspecting the troops, we were informed that the Fourth Tennessee was encamped near that place, where it had been since mobilization, and that it was wholly free from typhoid fever. A personal investigation showed the following facts: This regiment assembled June 28, although it was not mustered into United States service until about the middle of July. On August 12, Ernest Martin, who had not been well for a week preceding this time, was admitted to the regimental hospital. On August 15 he was furloughed, and on September 11 he died at his home in Nashville, Tenn., of typhoid fever. From the date of this first case up to the time of our inspection (September 14, 1898) there had been in this regiment not less than 11 well-marked cases of typhoid fever, although none had been so diagnosed by the regimental surgeon.

The Fifteenth Minnesota, at its regimental encampment at the Fair Grounds at St. Paul, Minn., and the Thirty-fifth Michigan, at Island Lake, Mich., developed epidemics of typhoid fever. Other instances might be cited, but these suffice to show the truth of the statement that the disease became epidemic in small as well as large encampments.

5. Typhoid fever became epidemic in camps located in the Northern as well as in those located in the Southern States.

Some medical officers have placed stress on the fact that Northern men were transferred to the Southen States in the summer time, and have attached considerable importance to the influence of non-acclimatization in the production of the epidemics of typhoid fever. In answer to this, we need only call attention to the fact that the Fifteenth Minnesota, Thirty-fifth Michigan and the Two Hundred and Third New York furnished large numbers of cases of typhoid fever, practically all of which developed before they crossed the Mason and Dixon line. There is nothing more certain than that the prevalence of typhoid fever among the troops in 1898 was not due to geographic location.

6. Typhoid fever is so widely distributed in this country that one or more cases are likely to appear in any regiment within eight weeks after assembling.

We have no reliable data concerning the extent to which typhoid fever prevails in this country, but from the number of deaths due to this disease, we can fairly estimate the number of cases. The following figures may give us some idea as to the chance of infected men being found in each volunteer regiment. In making these calculations, we will figure on the number of cases of typhoid fever in New York city. This city is selected because it is not subject to epidemics of this disease, and in fact, it is believed to be unusually free from it. Supposing that typhoid fever is no more deadly there than it is in Hamburg, and there is no reason for believing it is, then 299—the number of deaths from typhoid fever in New York city in 1897—is about 7.5 of the total number of cases of typhoid fever that occurred in that city in the year given. On making this computation, we find that there probably were 3,986 cases of typhoid fever in New York city in 1897. It is safe to say that at least four-fifths of the cases of this disease occur in individuals of military age—between 18 and 45. This means that in 1897 there were in New York city 3,188 cases of typhoid fever among those inhabitants who were from 18 to 45 years of age. The government census for 1890 gives that city's population at that time as 1,515,301. A police census made, in April, 1895, indicated a population of 1,849,866. I will be liberal in my calculation and suppose that its population in 1897 was 2,000,000. In round numbers, the number of people between 18 and 45 years of age is one-half the total population. On this basis, the number of people of military age in New York city in 1897 may be placed at 1,000,000—this includes both males and females. Had this 1,000,000 people of military age been divided into regiments of 1,300 each, they would have furnished 769 commands. We have seen that the number of cases of typhoid fever there among people of military age was probably 3,188, and if these had been evenly divided among the regiments of 1,300 each, each command would have contained at least four persons who in all probability would develop typhoid fever during the year. I make no claim that the above given figures are accurate. I have presented them simply for the purpose of showing the chances of there being men infected with typhoid fever in every regiment of volunteers. I think that it must be admitted that there is not much difficulty in accounting for the origin of typhoid fever in our national encampments. With this disease as prevalent as it is throughout the country, it is more than probable that in any organizaion of 1,300 men of military age, taken from private life and held together for two months, one or more cases will develop.

7. Typhoid fever usually appears in military expeditions within eight weeks after assembly.

The following quotations taken from a paper on "Enteric Fever in Camps," by Surgeon-Captain Davies, assistant professor of hygiene at the English Army Medical School, illustrate the above statement:

In the Galeaka-Gaika War in South Africa, the troops crossed the River Kei in December, 1877, in the hot and dry season. Diarrhea and "simple continued fever" soon became prevalent, but the general health was good. In the middle of January, 1878, heavy rains came on. Several cases of enteric fever occurred toward the end of the month. In February sickness increased, consisting principally of diarrhea, dysentery, and common continued fever. Bowel complaints diminished toward the end of March, but as the cold weather came on, enteric fever, at first mild and insidious, occurred throughout the country; and in May it is reported that no place was free from it.

In the Zulu War, which commenced at the end of December, 1878, fever appeared at the headquarters at Helpmakaar, and at Rorke's Drift, in the middle of February, accompanied by diarrhea and dysentery; the fever was thought to be "bilious remittent," or "enteric," or a mixture of both. Helpmakaar became so unhealthy that the troops had to be moved to Utrecht and Dundee. Epidemics of enteric fever immediately broke out at both of these places.

In the Afghan campaign of 1878-1880, it is noted that cases occurred at almost all the stations occupied by European troops stretching from the Indian frontier to Kabul and Kandahar. Some of these posts had probably never been occupied before, and many of these cases were quite isolated.

In the Egyptian expedition of 1882, there was great prevalence of bowel complaints, from the first landing of the troops in the latter part of July—diarrhea, dysentery and fever. Enteric fever occurred very soon, both at Alexandria and at Ismailia. When the troops arrived at Cairo, the disease increased gradually, but did not reach any great prevalence until October and November. During October, November and December, out of a total of 319 deaths no less than 223 were due to enteric fever.

In the Nile campaign, in 1884-85, a great number of isolated posts were occupied, extending over a large tract of country. Enteric fever occurred at all or nearly all of these posts, most severely at Assuan and Wady Halfa.

During the French operations in Tunis in 1881, the disease was extremely prevalent, about one-fifth of the whole force being attacked. It has been stated that all the columns on the march and nearly every occupied post were attacked more or less. In some instances bodies of troops suffered from the disease who had never been in contact with other (infected) troops, and who had not occupied any old (infected) encampments.

I have brought in these quotations in order to show that typhoid fever generally appears in military expeditions. Similar experiences are recorded in the history of mining camps in various parts of the world.

8. The miasmatic theory of the origin of typhoid fever is not supported by our investigations.

There are still some who believe that typhoid fever is due to a poison or miasma given off from the earth in gaseous form. I would not mention this obsolete theory were it not for the fact that while inspecting the camps we found intelligent medical officers who believed that some intangible local condition inherent in the place was an important factor in the production of the epidemic. There is apparently in man a tendency to believe in the evil genius of locality. He is prone to attribute many of his misfortunes to indefinable conditions surrounding the place in which he has suffered. As I have stated, no fact in our investigations has been brought out more prominently than the demonstration that locality was not responsible for the epidemics. The Fifteenth Minnesota first developed typhoid fever at the fair grounds at St. Paul. There is certainly no evidence that there is any evil climatic influence connected with this place. This command carried the epidemic with it to Fort Snelling, which has long had the reputation of being one of the most healthful army posts in the United States. From Fort Snelling the Fifteenth Minnesota was transferred to the open fields at Camp Meade, where generations of Pennsylvania farmers have passed the average number of years allotted to man without suspecting that their locality was an unhealthy one. However, typhoid fever continued with the regiment from Minnesota, because the men carried the germs of this disease in their bodies, clothing, bedding and tentage. Certainly, any rational being would prefer any of the above-mentioned localities to Port Tampa, Fla., as a place of summer residence, and yet there was not a regiment in the Fourth Army Corps, encamped for so long a time in Florida, that had as many cases of typhoid fever as did the Fifteenth Minnesota.

9. The pythogenic theory of the origin of typhoid fever is not supported by our investigations.

Murchison proposed this theory of the origin of typhoid fever. This author makes the following statement: "Typhoid fever may be generated independently of a previous case by fermentation of fecal, and perhaps other forms, of organic matter." Translated into terms of modern medicine, this theory is founded on the belief that the colon germ may undergo a ripening process by means of which its virulence is so increased and altered that it may be converted into the typhoid bacillus, or at least may become the active agent in the causation of typhoid fever. Many French, English and American army medical officers believe that typhoid fever may originate in this way. Rodet and Roux, of the French army, have stated their belief that outside of the body the colon bacillus acquires "typhigenic" properties. Surgeon-Captain Davies has expressed his belief in this theory, and some of the medical officers in the American army have also given it their adherence. Surgeon Davies gives the following statement of the reasons for his belief in this theory:

It is well known that "camp-diarrhea" is of the commonest occurrence among troops shortly after taking the field in a tropical and subtropical climate. Change of habits, change of food, improper or unsuitable food, bad water, heat and exposure to sun, and chill—these are all obvious factors in its causation; there is nothing in any way specific. Let us consider the sequel as regards the individual, and as regards his surroundings. The individual may in some cases remain in fairly good health and vigor in spite of a continuance of a bowel trouble; other individuals may suffer more, from the exposure, fatigue and weakening effects of the continued flux. The surroundings may possibly be and remain sanitary, the camp clean, the water pure; but in all probability the reverse will be the case, at any rate, in some instances; the water bad, the soil fouled, very likely overcrowding of the camp, with consequent difficulty, if not impossibility, of proper removal or disposal of fecal matter. Under certain conditions of heat and moisture, favorable to the development and multiplication of low forms of vegetable and animal life which is the more likely or reasonable to expect: That diarrhea in weakly and exhausted individuals should remain diarrhea and nothing more; or that with an increase of filth and decomposition, polluting soil, air and water, a development of filth-generated, pythogenic poison should take place, capable of causing in such weakly persons a fever, with diarrhea, a posoning of the organism, producing pyrexia and inflammation of certain glands in the alimentary tract, in fact, a specific fever? Is thi ssupposition of the evolution, gradual or rapid according to circumstances, of a disease poison dependent on increased conditions of pollution of soil, air, or water, either separately or all three together, unreasonable or illogical? Would it not, on the contrary, be more unreasonable to suppose that, under such conditions, there could be no evolution at all? These conditions of camp pollution undoubtedly exist, and tend to increase, in many instances; are they to have no effect? Is diarrhea to continue as simple diarrhea, or is evolution to come into action and produce a new disease? New, indeed, only because the causes necessary for its production are just now brought into operation —spontaneous only in the sense that water is of spontaneous origin when from hydrogen and oxygen the electric spark has produced water, where no water was before.

I believe that the results of our investigation controvert this theory conclusively. In the first place, we have been able to show that the specific poison of typhoid fever was introduced into every one of our national encampments, and with the disease as widespread as it is in this country, I believe that we have good reasons for the claim that one or more men already specifically infected with typhoid fever enlisted in nearly every command. There is, therefore, no necessity of resorting to the theory that the colon bacillus may be converted into the typhoid germ. Moreover, all the known facts of experimental bacteriology are at variance with this theory. So far as the supposition that simple diarrhea may develop into typhoid fever is concerned, I may state that in my opinion our investigations conclusively prove that this is not true. The history of typhoid fever in every encampment shows not only that this disease was not evolved from simple diarrhea, but that as a rule the men who had diarrhea did not subsequently develop typhoid fever.

10. Our investigations confirm the doctrine of the specific origin of typhoid fever.

As has already been stated, we have been able to trace the introduction of typhoid fever into every one of our national encampments and into the majority of the regiments. In the case of the few commands about which there is some uncertainty as to the men bringing the typhoid infection from their homes, I may state that in all of these there was ample opportunity for the introduction of the specific poison from other commands.

11. With typhoid fever as widely disseminated as it is in this country, the chances are that if a regiment of 1,300 men should be assembled in any section and kept in a camp, the sanitary conditions of which were perfect, one or more cases of typhoid fever would develop.

I have already stated my reasons for belief in the above given proposition. In such a camp, however, the disease would not become epidemic, and ultimately it should disappear altogether.

12. Typhoid fever is disseminated by the transference of the excretions of an infected individual to the alimentary canals of others.

It is more than probable that many individuals may for a while carry and eliminate the specific bacillus of typhoid fever without themselves developing the disease. Later, I will make some statements concerning the probable proportion of men who are immune to this disease. It is now a well-known fact that persons who have recovered from typhoid fever may for a long time continue to carry and excrete the specific poison. It has also been shown that the longevity of the typhoid bacillus, both inside and outside of the body, is much greater than is generally supposed.

13. Typhoid fever is more likely to become epidemic in camps than in civil life because of the greater difficulty of disposing of the excretions from the human body.

This proposition is so self-evident that it needs no lengthy argument to support it. The influence of the introduction of sewers into cities in decreasing sickness from this disease is well known to every student of sanitary science. Moreover, since the disease is disseminated by the transference of the excretions of an infected individual to the alimentary canals of others, it must follow that the more thoroughly and completely the excretions are removed from the vicinity of habitations the less will be the danger of infecting the inhabitants. In fact, the whole question of the prevention of typhoid fever in armies is largely one of the disposition of the excretions. Later I will give figures to show that the prevalence of typhoid fever in certain camps was in direct proportion to the thoroughness with which the excreta were removed from the vicinity of the camps.

14. A man infected with typhoid fever may scatter the infection in every latrine of a regiment before the disease is recognized in himself.

The elimination of typhoid bacilli from the bowels probably begins soon after infection. If this be true, during the entire period of incubation an individual may be a source of danger to others. Moreover, in most instances of typhoid fever the disease is not recognized during the prodromal stage, and during this time the excretions may be laden with typhoid bacilli. It must be evident from this that the only way in which typhoid epidemics can be with certainty prevented in armies is by the complete disinfection of the stools of all, both the sick and the well.

15. Camp pollution was the greatest sanitary sin committed by the troops in 1898.

In the history of the different regiments given in our report, we have had too frequent opportunity to call attention to the fearful pollution that existed in many camps. We have stated that fecal matter was deposited on the surface about the camps at Chickamauga and at other national encampments. Much of the filth must have been specifically infected with typhoid fever. Sinks were frequently overflowed by heavy rains, and their contents were distributed on the adjoining surface. I can not here dwell on this point, and must refer for particulars to regimental records given in our report.

16. Some commands were unwisely located.

While there is no evidence that any of the places selected for national encampments could be called unhealthful, it is true that some of them were not suited for camp sites. It was quite impossible to keep camps in a sanitary condition at the location for a while occupied by one brigade of the Fourth Army Corps near Port Tampa, Fla. On account of the nature of the ground and the surroundings, Palmetto Beach was certainly a very unsuitable location for a permanent camp. Every medical officer in the First Division of the Seventh Army Corps condemned Miami, and this condemnation was approved by officers of both staff and line, who visited this encampment. The men could not be made comfortable at this place. Notwithstanding these facts, there were regiments at Chickamauga that had more cases of typhoid fever than did any of those in the division at Miami, but this is no reason why the troops at the latter place should have been so uncomfortably situated. Some commands were unwisely located, for the simple reason that the soldiers could not be comfortably accommodated at the place selected. There was, however, a much more serious defect in the location of certain commands. Some regiments at Chickamauga, as we have shown in our report, were so located that they received the drainage of other regimental camps. There was certainly no sufficient excuse for this.

17. In some instances the space allotted the regiments was inadequate.

This was true of more than one command at Chickamauga. For instance, the One Hundred and Fifty-eighth Indiana was forced to contract its lines to half the regulation distance, and then it was only fifty feet distant from the Sixth Ohio. The sinks of the last-mentioned regiment and the kitchens of the First West Virginia were only twelve or fifteen feet apart. I am forced to conclude from this and numerous other similar examples that there were line officers in the First and Third Army Corps whose efficiency might have been enhanced by some knowledge of camp hygiene.

18. Many commands were allowed to remain on one site too long.

There were regiments at Chickamauga that did not move a tent from the time of arrival in May until that of departure late in August.

19. Requests for change in location made by medical officers were not always granted.

As an illustration, I will refer to the official records of the Fifth Pennsylvania. This command reached Chickamauga Park on May 20, and was unfortunately located on low ground. Requests for change in location were repeatedly sent in during June and July. The earth became muddy, the camp received the washings from other camps above, the sinks rapidly filled with water and overflowed, and yet requests for change in location were unheeded until August 12, when the regiment was allowed to occupy a new camp two miles to the west and on a higher piece of ground.

20. Superior line officers can not be held altogether blameless for the unsanitary condition of the camps.

As we have already seen, some of the regiments were improperly located from a sanitary standpoint. This was done by superior line officers, and sometimes in the face of protests from the medical officers. We have also seen that requests for change in location were disregarded and regiments were allowed to occupy one site for too long a time. In general, the camps became very filthy. It must therefore be admitted that line officers were to some extent responsible for the condition of the camps under their command. The medical officer can only recommend; the line officer may command. We think it unfortunate that no adequate instruction is given in hygiene in our national military school, It does seem that line officers should at least know enough of this subject to be able to recognize the importance of reasonable requests and recommendations made by medical officers.

21. Greater authority should be given medical officers in matters relating to the hygiene of camps.

It is of the greatest importance that more authority be granted medical officers in all matters pertaining to the hygiene of camps. Certain men in the medical corps should be selected to do the duties of sanitary inspector, and these should be chosen on account of recognized ability in this particular line. The sanitary inspector should make his reports in duplicate, one copy of which should be presented to the commander in charge of the troops, while the other should be forwarded to the surgeon-general. When the line officer in command fails to comply with requests made by a medical inspector, he should state in writing the reasons for non-compliance, or at least he should in writing acknowledge the receipt of the recommendation.

22. It may be stated in a general way that the number of cases of typhoid fever in the different camps varied with the method of disposing of excretions.

This is well illustrated by the methods of disposing of fecal matter and in the number of cases of typhoid fever in the three divisions of the Seventh Army Corps. The First Division was most uncomfortably located at Miami, Fla., from the last week in June until the second week in August. On the last-mentioned date it was removed to Jacksonville, where it joined the other divisions. During a part of its stay at Miami, and during the entire period of its encampment at Jacksonville, water-carriage was employed for this disposal of fecal matter. In the Second Division the tub system was employed. By this method infected fecal matter was scattered all through the camp. In the Third Division regulation pits were used. The number of cases of typhoid fever was smallest in the First Division, and greatest in the Second Division.

23. The tub system of disposal of fecal matter as practiced in the Second Division of the Seventh Army Corps is to be condemned.

Of all the methods for disposal of fecal matter practiced in the national encampments in 1898, I regard this as the most unsatisfactory.

24. The regulation pit system is not a satisfactory system of disposing of fecal matter in permanent camps.

Especially is this true in hot weather. It is a very difficult thing to have soldiers appreciate the necessity of keeping fecal matter covered. As I have elsewhere stated, in many camps, orders were issued requiring each man to cover his stool as soon as deposited, but we did not inspect the pits of a regiment in which we did not find exposed fecal matter. Moreover, in the camps in 1898 flies swarmed so numerously that the first droppings of fecal matter were often covered with them before the act of defecation was completed. The pit system may be employed when armies are on the march, and stopping at one place for a few days at most, but even then they are sources of danger, and it is quite impossible to prevent the spread of typhoid fever in camps in which this method of disposing of fecal matter is employed. At Chickamauga it was well-nigh impossible to prepare sinks of proper dimensions, and still more difficult to keep the contents of these sinks properly covered. The clay thrown out in digging the pits hardened in the sun, and when thrown back on the contents had but little absorptive power, and the result was that fecal matter was constantly exposed. In some of the camps about Tampa it was impossible to dig sinks to proper depth on account of the height of the ground water. For these reasons, I am thoroughly convinced that if epidemics of typhoid fever are to be prevented, some other method of disposing of fecal matter in camps occupied for a week or longer must be resorted to.

25. Our board has recommended that in permanent camps where water-carriage can not be secured, all fecal matter should be disinfected and then carted away from camp.

For this purpose we have made a special recommendation that galvanized iron troughs containing milk of lime be used for the reception of all fecal matter, and that the contents of these be removed daily by means of the portable odorless excavator. I am aware of the fact that this method of disposing of fecal matter will be attended by increased cost, but I am confident that it will greatly lessen the number of cases of typhoid fever. These troughs, and the method of using them, have been fully described in our report. I believe that there is no question pertaining to army hygiene of greater importance than that relating to the method of disposing of fecal matter. The way in which this is done largely determines the number of cases of typhoid fever that will develop in any command.

26. Infected water was not an important factor in the spread of typhoid fever in the national encampments in 1898.

There probably were local water-supplies that became specifically infected with the typhoid-fever bacillus, but infected water was not the great factor in the causation of this disease. It is possible that the piped water at Chickamauga Park became specifically contaminated. Certainly the location of the intake pipe in Chickamauga Creek, so near the junction of that stream with Cave Spring Branch, which drained many of the camps, was not justifiable, and it hardly seems possible that the piped water wholly escaped contamination. However, that even at Chickamauga infected water was not the chief factor in the spread of typhoid fever is shown by the fact that regiments that did not drink this water also became widely infected with the disease, and it is furthermore demonstrated by the fact that the spread of typhoid fever continued after the regiments had been removed to Knoxville, Tenn., and Lexington, Ky., at both of which places the water-supply was above suspicion. It is also probable that some of the local water-supplies at Chickamauga became specifically contaminated. This might have been true of the wells from which the regiments of the Second Division of the First Army Corps for a while drew their supply. The location of the Jay's mill well, for instance, was such as to receive the drainage from typhoid fever infected camps near it, and it is not likely that this water escaped specific contamination. I am also inclined to attribute the greater prevalence of typhoid fever in the Third Army Corps to the fact that the sites covered by the regiments of this corps furnished many wet weather springs, which in all probability were specifically contaminated. That the water was not infected at Jacksonville seems to be beyond question. The supply came from artesian wells more than 1,000 feet deep, and was distributed through the camps by means of pipes. In August and September of 1898, there were in round numbers at Jacksonville, 30,000 civilians or inhabitants of the city, and the same number of soldiers in camp near it. Both civilians and soldiers drank water from the same source. There were only a few sporadic cases of typhoid fever in the city at a time when each of the three division hospitals was receiving a score or more of patients with this disease each day. The same condition existed at Knoxville. Here the soldiers obtained their water-supply from the pipes that furnish West Knoxville. We satisfied ourselves, from an inspection of the health officer's records, that there were no cases of typhoid fever among the citizens, and at that time there were hundreds of cases among the soldiers. At Camp Alger, certain local water-supplies probably became contaminated, but there is no evidence that this was generally true. Each regiment obtained its supply from a bored well, and while there was some question about the wisdom of the location of a few of these, the majority were so situated and so constructed that infection seemed well-nigh impossible. The same was true of the water-supply at Camp Meade.

27. Flies undoubtedly served as carriers of the infection.

My reason for believing that flies were active in the dissemination of typhoid fever may be stated as follows: a. They swarmed over infected fecal matter in the pits and then visited and fed on the food prepared for the soldiers at the mess tents. In some instances where lime had recently been sprinkled over the contents of the pits, flies with their feet whitened with lime were seen walking over the food. b. Officers whose mess tents were protected by means of screens suffered proportionately less from typhoid fever than did those whose tents were not so protected. c. Typhoid fever gradually disappeared in the fall of 1898 with the approach of cold weather, and the consequent disabling of the fly.

It is possible for the fly to carry the typhoid bacillus in two ways. In the first place, fecal matter containing the typhoid germs may adhere to the fly and be mechanically transported. In the second place, it is possible that the typhoid bacillus may be carried in the digestive organs of the fly and may be deposited with its excrement.

28. It is more than likely that men transported infected material on their persons or in their clothing, and thus disseminated the disease.

In some of the commands it was customary to detail men from the line every morning to serve as orderlies at the hospital. These men went to the hospitals, handled bedpans used by persons sick with typhoid fever, and at night returned to their comrades. The most of them were wholly ignorant of the nature of the infection and the methods of disinfection. In fact, at one of the division hospitals we saw orderlies of this kind go from the hospital and partake of their midday lunch without even washing their hands. These men handled not only the food which they ate, but passed articles to their neighbors. It seems to me that a more certain method for the dissemination of infectious disease could hardly have been invented. I have stated that in some of the camps the surface of the ground, especially where there were strips of woods, was frequently dotted with fecal deposits. At the time of our inspection of the Third United States Volunteer Cavalry at Chickamauga it was quite impossible to walk through the woods near this camp without soiling one's feet with fecal matter. Much of this was probably specifically infected, and it is by no means improbable that the infection was carried by the men into their tents, where blankets and tentage became infected.

29. Personal contact was undoubtedly one of the means by which the infection was spread.

The truth of this statement will be more evident after an inspection of the charts showing distribution of the disease in different regiments, which we have provided for our report. On making such an inspection one must be impressed with the fact so plainly evident that men who were closely associated developed typhoid fever simultaneously. Men in the same company came down with the disease on or about the same time. This became still more evident when we studied the cases with reference to the tents occupied by the men. Certain tents were badly infected, and the majority of all of their inmates developed the disease; while other tents wholly escaped. There are reasons for believing that this was an important factor in the spread of the disease. Blankets and tentage became soiled with typhoid discharges, and in this way the disease was carried by the command wherever it went.

30. It is probable that the infection was disseminated to some extent through air in the form of dust.

The shell roads through the encampment at Jacksonville were ground into the finest dust by the heavy army wagons. The scavenger carts carrying the tubs filled with fecal matter passed along these roads, and their course could often be traced by bits of feces falling from the tubs. Other vehicles ground up the fecal matter and dust together, and the winds disseminated these particles here and there. Men inhaled this dust; it was deposited on their food, and men ate the dust. Having seen these things, I am inclined to the opinion that infected dust was one of the factors in the dissemination of typhoid fever. I am aware of the fact that complete desiccation soon destroys the typhoid germ, but dust is not always completely desiccated.

31. A command badly infected with typhoid fever does not lose the infection by simply changing location.

I do not mean to say that it is not advantageous for a regiment badly infected with typhoid fever to change its location. On the other hand, in our history of the Second Division of the First Army Corps, we have shown that such change is of advantage and may be followed by a reduction in the number of cases; but mere change in location is not sufficient to stamp out the disease in a command after it has become widely disseminated. The histories of many regiments show this to be true. The Second Division of the First Army Corps became badly infected with typhoid fever at Chickamauga; later it moved to Knoxville, Tenn.; at the latter place the location was an ideal one, the water-supply was above suspicion, the surface was gently rolling and natural drainage good. The soil was deep and pits of proper depth were easily constructed. Soil thrown out in digging pits dried in the sun and became highly absorptive, so that when thrown back on the fecal matter it readily took up the moisture. Notwithstanding all these favorable conditions typhoid fever continued, and instead of showing the slightest abatement increased in prevalence. The regiments that went from Chickamauga to Lexington, Ky., had a similar experience, although it was not so marked in these, probably because they had been more severely afflicted at Chickamauga and a larger proportion of the susceptible material had been used up. The regiments of the First Division of the First Army Corps that went to Porto Rico carried the infection along with them, with but little, if any, abatement. Numerous other equally striking illustrations might be given.

32. When a command badly infected with typhoid fever changes its location, it carries the specific agents of the disease in the bodies of the men, in their clothing, bedding and tentage.

This is shown by the fact that when commands changed location, leaving behind all their sick, and when they went to places free from the infection, the disease continued with them.

33. After a command becomes badly infected with typhoid, change of location, together with thorough disinfection of clothing, bedding and tentage, is necessary.

Even when disinfection is carried out as here suggested, the command will not altogether lose its typhoid infection, because some of the men will carry the germs of the disease in their bodies. Change of location removes the command from the infected locality; disinfection of clothing, bedding and tentage destroys the infected material deposited on these articles; but the germs that have already been introduced into the bodies of the men are not so easily reached. The utility of disinfection of clothing, bedding, and tentage was demonstrated by Colonel Girard, who carried out this procedure in some of the most seriously infected regiments at Camp Meade with gratifying results.

34. Even an ocean voyage does not relieve an infected command of its infection.

This is shown to be the case in the study of various commands that went to Cuba and Porto Rico. The regiments constituting the Fifth Army Corps that went from Tampa to Santiago in June were not widely infected before embarkation, and some of them were on board ship for sixteen days, and yet all developed one or more cases either on the way or soon after reaching Cuba. The regiments that went from Chickamauga to Porto Rico were widely infected before leaving this country and the disease continued after their landing with but little, if any, abatement.

Except in case of most urgent military necessity one command should not be located on a site recently vacated by another.

This principle holds good even when the vacating regiment is not known to have suffered from any infectious disease. This axiom in military hygiene was frequently violated during the summer of 1898. In many of the State encampments the regiments that responded to the second call were located on sites recently vacated by commands that had proceeded to the national encampments. This was true of the Fifteenth Minnesota, the Thirty-fifth Michigan, and the Two Hundred and Third New York, each of which, as we have already seen, developed a large number of cases of this disease. The Third Illinois at Chickamauga was located on ground which had recently been vacated by the Sixteenth United States Infantry. The regular regiment had occupied this site only eight days, and during this time had reported no sickness, but soon after it reached Tampa it developed 13 cases of acute intestinal catarrh, 3 of diarrhea, and 3 of typhoid fever. When the Second Brigade of the First Division of the First Army Corps reached Chickamauga Park, the site selected for the regimental camp of the Third Illinois occupied a part of that recently vacated by the Sixteenth United States Infantry, while the other regiments of this brigade were placed at some distance away. This brigade remained at Chickamauga until July 22, during which time the Third Illinois developed 60 cases of typhoid fever, the Fourth Pennsylvania 26 cases, and the Fourth Ohio 19 cases. Additional instances of this kind have been given in our report.

36. The fact that a command expects to change its location does not justify neglect of proper policing of the ground occupied.

The filthy condition of some of the regimental camps at Chickamauga was explained on the ground that each regiment expected to be called to the front in a few days, and therefore neglected camp sanitation. A camp site should be thoroughly policed up to the moment of vacating it. This should be insisted on as a matter of military discipline, and camp commanders should regard proper attention to the sanitation of the sites occupied by their troops as one of their highest duties, and its neglect as a crime.

37. It is desirable that the soldiers' beds should be raised from the ground.

In some of the regiments at Camp Alger the tents were never floored. On inspecting these commands in August, we found dust several inches deep in the tents. During the day-time, in fair weather the blankets were taken out, and men, possibly with their feet soiled with infected material, walked around in this dust, and at night threw their blankets down on it and there slept. This was both unsanitary and uncleanly. We admired the enterprise of the men in some regiments who built in their tents a scaffold of poles, covered this with straw, and made their beds on this. I can not but think that sleeping in a dust pile, which is possibly infected with typhoid material, is not wise.

38. In some of the encampments the tents were too much crowded.

This was true both of the space allotted the tents and of the number of men occupying each tent. In some instances the tents of the same company were so close together as to leave no space between them, and those of two adjacent companies were crowded together back to back. Inasmuch as none of these commands were in the vicinity of any hostile camp, this overcrowding seems to have been wholly unnecessary. In some of the commands at Chickamauga the tents were not shifted, but stood continuously on the spot where they were pitched in May until the command left late in August.

39. Medical officers should insist that soldiers remove their outer clothing at night when the exigencies of the situation permit.

With from twelve to sixteen men in a tent, all sleeping in the clothes worn during the day and possibly with some of them soiled with infected fecal material, the effect on the general health certainly could not have been beneficial, and the possibility of the dissemination of the infection must be admitted. If privates in the ranks would give as much attention to personal cleanliness as officers do, and if they were furnished with quarters in which they could keep themselves clean, typhoid fever and other infectious diseases in armies would be greatly decreased. As I have already stated, our investigations show that tent infection must have been an important factor in the distribution of typhoid fever.

40. Malaria was not a prevalent disease among the troops that remained in the United States.

We have shown in our report that blood examinations for the plasmodium of malaria made by competent men at Chickamauga, Knoxville, Camp Meade, and Jacksonville show that malaria was a rare disease among the troops that remained in the United States. This disease was undoubtedly more common in some of the camps than the blood examinations would indicate, because these were made for the most part on hospital patients and not on those who merely reported to the regimental surgeon, were given quinin, and were returned to duty in a day or two. The malaria that did exist in the national encampments in this country yielded readily to quinin, and the cases that did not yield to this treatment were not malaria.

41. The continued fever that prevailed among the soldiers in this country in 1898 was typhoid fever.

There is no evidence that any other continued fever was found among the troops that remained in the United States. One surgeon claims that dengue prevailed in his regiment at Chickamauga. I think it quite impossible for dengue to have prevailed in one regiment, while all other troops of two army corps encamped at the same place escaped this disease. It was claimed by some that the continued fever prevalent at Chickamauga differed from typhoid, and that it was a disease peculiar to the place; it was designated "Chickamauga fever." That the continued fever prevalent in our camps in 1898 was typhoid fever is demonstrated by the following facts: a. When the temperature-curve was not vitiated by the use of antipyretics, it was that of typical typhoid fever. b. The fever was not broken or arrested by the administration of quinin. c. The death-rate was that of typhoid fever. d. Whenever a post-mortem examination was made, and the total of these was considerable, the characteristic lesions of typhoid fever were found.

42. While our investigations show that coincident infection with malaria and typhoid fever may occur, the resulting complex of symptoms does not seem to be sufficiently well defined and uniform to be recognized as a separate disease.

In our report we have devoted a special chapter to this subject, and I will be compelled to refer those desiring detailed information to this.

43. About one-fifth of the soldiers in the national encampments in the U. S. in 1898 developed typhoid fever.

Among 44,803 officers and men in regiments of the First and Third Army Corps, the records of which we have carefully studied, the number of cases of typhoid fever according to our estimate was 9,660. This is equivalent to 21.56 per cent. In the Fourth Army Corps the percentage seems to have been somewhat less. However, the records of some of the regiments of this corps were not well kept, and we can not be so positive concerning the number of cases.

44. Army surgeons correctly diagnosed a little less than half the cases of typhoid fever.

The total number of probable cases of typhoid fever among the regiments studied in Chickamauga was 9,660. Of these 4,068 were diagnosed typhoid fever either by regimental or hospital surgeons. Most of the cases improperly diagnosed were sent to general military hospitals, or to civil hospitals with the diagnosis, "malaria." In 80 out of 85 cases sent from the Fifth Maryland to civil hospitals in Baltimore, the diagnosis was changed from malaria to typhoid fever. Of 98 cases sent from the Eighth New York to hospitals in New York city, all were recognized as typhoid fever by the physicians in the hospitals, while the majority of these had been entered on sick reports under other diagnoses. The failure of regimental surgeons to properly diagnose many cases of typhoid fever is easily explained. Orders required, very properly, that every man sick for forty-eight hours should be sent to the division hospital. It will be seen from this that the cases were not under the observation of the regimental surgeon for a sufficient time for him to make a diagnosis. There is also some excuse for the failure of the surgeons at the division hospitals to recognize all the cases of typhoid fever. Many of the less severe of these cases remained in hospitals for a short time, and were furloughed home, or forwarded to some general hospital. Moreover, we have shown in the body of our report that, in recognizing nearly one-half the cases of typhoid fever, the army surgeon probably did better than the average physician throughout the country does in his private practice.

45. The percentage of deaths among cases of typhoid fever was about 7.5.

Of the 9,660 cases already mentioned as occurring among certain troops at Chickamauga, 713 died. This gives a death-rate of 7.38 per cent. This corresponds closely with the death-rate for typhoid fever in those places in which most accurate records have been kept. In the city of Hamburg, during the years 1886-87, there were 10,823 cases with a death-rate of 8.5 per cent. Brandt has collected 19,017 cases treated by cold baths with a mortality of 7.8 per cent. Of 2,293 cases treated in some of the larger hospitals in this country in 1897, 9.24 per cent. died. Further details concerning the mortality in typhoid fever are given in our report.

46. When a command is thoroughly saturated with typhoid it is probable that from one-third to one-quarter of the men will be found susceptible to the disease.

I am inclined to believe, but desire to state it as an opinion, that typhoid fever disappeared in some of the regiments only after all the susceptible material had been exhausted. This was probably true in all regiments which had 400 or more cases.

47. In military practice typhoid fever is often apparently an intermittent disease.

This fact is shown especially in the study of the Eighth New York. Please bear in mind that I state that typhoid fever is apparently an intermittent diseases. I do not mean that the apparent intermissions are afebrile; I only mean that the men sick with the disease had periods of improvement which were so marked that regimental surgeons often returned the men to duty, probably at the request of the men themselves. We have discussed this very fully in our history of the Eighth New York.

48. The belief that errors in diet with consequent gastric and intestinal catarrh induced typhoid fever is not supported by our investigations.

This belief, which was formerly held by meany, is founded on false conclusions arising from erroneous conceptions of the etiology of the disease. Moreover the early symptoms of typhoid fever are often confounded with those of simple gastrointestinal catarrh.

49. The belief that simple gastrointestinal disturbances predispose to typhoid fever is not supported by our investigations.

The members of our board began their investigations with the belief, which seems to be quite generally held, that acute diseases of the gastrointestinal tract render the individual more susceptible to subsequent infection with typhoid fever. However, our studies have forced us to come to the following conclusions concerning the relation between typhoid fever and preceding temporary disorders, including those diagnosed as diarrhea, enteritis, gastroenteritis, gastroduodenitis, intestinal catarrh, gastrointestinal catarrh, gastric fever, and simple indigestion: a. The temporary gastrointestinal disturbances of May and June had but little if any effect on subsequent infection with typhoid fever. b. The temporary gastrointestinal disturbances of July and August, instead of predisposing to typhoid fever, gave a certain degree of immunity against subsequent infection with this disease. In our report we have attempted to give an explanation of this.

50. More than 80 per cent. of the men who developed typhoid fever had no preceding intestinal disorder.

In 2,763 cases in which this point was especially investigated, 2,356 were not preceded by any intestinal disorder.

51. The deaths from typhoid fever were more than 80 per cent. of the total deaths.

The percentage of deaths of typhoid fever to total deaths is not so high if we accept the diagnoses given in the official reports.

52. The shortest period of incubation in typhoid fever is probably something under eight days.

This statement is founded on data obtained by a study of typhoid fever among the hospital corps, men and women nurses at Chickamauga. The details are given in our report.

53. One who has lived in a camp in which typhoid fever is prevalent is liable to develop this disease any time within eight weeks after leaving such a camp.

The particulars bearing on this statement are given in our history of the Fifth Pennsylvania.

THE PRESENT STATUS OF THE WIDAL REACTION AS A DIAGNOSTIC TEST IN TYPHOID FEVER.*

By ARTHUR R. GUERARD, M.D., 150 W. 132d Street, New York.

No method of diagnosis, perhaps, has excited greater interest among physicians in recent years than the so-called Widal or serum reaction in typhoid fever. This reaction, as is well known, is based upon the fact that living and actively motile typhoid bacilli, if placed in the diluted blood or serum of a patient suffering from typhoid fever, within a very short time lose their motility and become aggregated into clumps. Though this particular agglutinating influence was originally observed by Pfeiffer, and independently described by Gruber and his pupils, Widal deserves the credit of having first practically applied the reaction on a more extensive scale as a test for the diagnosis of typhoid fever. Since Widal's announcement, some three years and a half ago, of his method of performing this test, the serum reaction has been confirmed by numerous other observers, and it has now become one of the recognized tests in bacteriological laboratories in all parts of the world, not only for routine diagnosis, but especially for the identification of obscure cases of typhoid infection and for the differentiation of the typhoid bacillus.

It is true that the medical journals have contained not infrequent reports of isolated cases in which the reaction was wanting throughout the disease, but in which the clinical symptoms or even post-mortem findings seemed to point to the diagnosis of typhoid fever. Many cases have also been noted in which the reaction was present, though the evidence apparently favored some disease other than typhoid. It has been repeatedly found, moreover, that the blood or serum of patients who have once had typhoid fever may retain for many months its agglutinative reaction. Again, it has been shown that in a certain proportion of cases in healthy persons and those not affected with typhoid fever there may be a delayed moderate reaction (due to substances different from those in typhoid blood, though having similar effects, as in horse serum, for instance) in a dilution of 1 to 10 of blood or serum, the proportion originally proposed by Widal. These observations have not unnaturally tended to cast considerable doubt in the minds of physicians having but little experience with the reaction upon the practical value of the test for diagnostic purposes.

---

* Read before the Society of the Alumni of the City (Charity) Hospital, December 13, 1899.

On the other hand, attention has been drawn to the fact that the majority of supposed non-typhoid affections in which the serum reaction has been observed were diseases in which the differential diagnosis is often extremely difficult and which are not uncommonly mistaken clinically for typhoid—viz., malaria, low continued fevers, pernicious anæmia, acute miliary tuberculosis, etc. It is evident in such cases, when the Widal reaction is present, that, without absolute bacteriological findings for an autopsy, the conclusion that the condition is not one of typhoid infection is not justified; and with regard to malaria, it is well to note that the two affections may occur together. Occasionally, also, the Widal reaction is very late in appearance, not occurring before the fourth or fifth week of the attack, and sometimes only during a relapse; so that, unless these cases are closely followed up and repeated examinations of the blood made throughout their entire course, the reaction may be missed. Finally, it has been established that, although a slow moderate reaction in a 1-to-10 dilution of blood or serum may now and then occur in non-typhoid cases, rarely, if ever, excepting in typhoid infection, does a complete reaction take place in this dilution within five minutes, and that in dilutions of 1 to 20 or more a quick reaction is never produced in any febrile disease other than that due to typhoid infection, while in typhoid fever such a distinct reaction often occurs in dilutions of 1 to 50 and over.

Furthermore, although in observations of this kind, which depend not only upon the conditions under which they are made, but also upon the experience of the observer, no great reliance can be placed on statistics; still, the results which have been obtained from the Widal reaction, according to recent statistics gathered from various sources throughout the world, are so remarkably uniform in character that we must admit them to be approximately correct and conclusive. Thus, from collective investigations made by Cabot, Anders and McFarland, Stengel and Kneass, ourselves, and others of large series of cases submitted to this test, it appears that positive reactions have been obtained in over ninety-five per cent. of the typhoid cases in which repeated examinations were made, while in non-typhoid cases similar reactions have been observed in only five per cent., some of which, it may be assumed, had had previous typhoid fever, or at least a mild form of typhoid infection.

The method which is now employed by us for the serum test is as follows: A dilution of blood or serum is first made in the proportion of 1 to 10. In the case of dried blood (a drop or two of which has been collected on a glass slide) it is dissolved in a little water and then mixed with the typhoid culture, the degree of dilution being determined by the color. By previously making test solutions of dried blood in water of known proportions and noting the color, the dilution may be accurately enough gauged for all practical purposes. With serum (as collected from a fly blister, and which is preferable for examination, not only because the dilution can be more exactly made, but on account of its containing less fibrinous deposit), one part of serum is added to nine parts of the broth of culture. This latter should contain living and actively motile isolated bacilli, although bacilli which have been killed by such substances as bichloride-of-mercury solution also give a fair reaction. If there is no reaction when the mixture is observed in the hanging drop—that is to say, if within five minutes no marked change is noted in the motility of the bacilli, and no considerable clumping occurs—the result is regarded as negative, and no further test of the specimen is made. If complete clumping and immobilization of the bacilli occur within five minutes, this is called a marked immediate typhoid reaction, and, though no further test is necessary, the reaction may be confirmed with the higher dilutions up to 1 to 20 or more. If, however, upon examination of the mixture there is no marked reaction, but the bacilli only show in the first few minutes an inhibition in their motility and a tendency to clump, but which is not complete within five minutes, it becomes necessary to test this with dilutions at least up to 1 to 20, in order to measure the strength of the reaction. If in the 1-to-20 dilution a complete distinct reaction takes place within thirty minutes, the result is considered positive—that is, that the blood has come from a case of typhoid infection—while if a less complete reaction occurs it is regarded as only probably typhoid. The time allowed by many observers, especially abroad, for the development of the reaction with the higher dilutions is from one to two hours, but thirty minutes seems to us a sufficient time limit. Positive results obtained in this way may be taken as conclusive evidence of the recent or previous existence of typhoid infection in the patient. A previous attack of typhoid within a period of one or more years, exceptionally, vitiates the value of the reaction. On the other hand, the absence of reaction in any one examination does not exclude typhoid; so that if the case remains clinically doubtful, repeated examinations should be made every few days.

In conclusion, from a review of the published reports on the subject, and from an experience in the health department laboratories with the practical application of the Widal reaction extending over three years and including the examination of fifty specimens or more a week, it may be said that this test, when performed with due regard to the avoidance of all possible sources of error, is as reliable a method of diagnosis as any other bacteriological test at present in use. It is simple and easy of performance by any one versed in bacteriological technique. The serum reaction is never present in other diseases, if correctly tested and in the proper dilution, as is so often the case with the diazo reaction of Ehrlich. It is better adapted for routine employment than are any of the methods now in use for isolating the bacillus from fæces or urine.

It is certainly safer than spleen puncture; and it is not so difficult as, though far more reliable than, the leucocyte count. The reaction does not appear, as a rule, during the first few days of the disease, but it is usually manifest before the rose-colored eruption appears, though occasionally it is very late in appearance, and in rare cases may be entirely absent. A negative result can not be considered as having much significance, but a positive reaction when present—previous typhoid or an earlier reaction being excluded—is almost as strong evidence of the existence of the specific infection as the actual demonstration of the typhoid bacilli.

Thus, while the Widal reaction has undoubted limitations, it is nevertheless, of inestimable value as an aid to the clinical diagnosis of irregular or mild cases of typhoid fever.—*New York Medical Journal.*

THE DIETETIC TREATMENT OF TYPHOID FEVER CASES.

By WILLIAM MURRELL, M.D., F.R.C.P.,
Physician to the Westminster Hospital, London, England.

There is a growing belief that the dietetic treatment of cases of enteric fever might be improved with advantage. The orthodox custom at all our large London hospitals has been to resort to "two hour feeds," that is, the patient has three pints of milk in the twenty-four hours, divided into "feeds" of five ounces every alternate hour. The milk is the milk as it is received from the milk man; it is as a rule supplied by contract, and I do not know that any particular inquiry is made as to its purity or nutritive value. If the patient has much diarrhea it may be mixed with one-fourth lime water, and possibly if it is not readily assimilated it may be peptonized. This method of dieting is kept up during the whole of the illness, and nothing in the shape of solid food is allowed until the patient has had a normal temperature for ten days. That the results are good, and that the mortality is extremely low, must be freely admitted. Who instituted this code it is difficult after the lapse of so many years to say, but it probably originated with the eminent French physician Trousseau. How far it may be departed from, with safety, is a question which of late has received a good deal of attention. In 1897, Dr. A. G. Barrs, in the *British Medical Journal*, opened up the whole subject, and still more recently Dr. R. W. Marsden, the Medical Superintendent of the Monsall Fever Hospital, has published the results obtained in two hundred unselected cases of enteric fever, in which a more liberal dietary was allowed.

Acting on this suggestion, I have of late departed from the rules hitherto laid down for our guidance, and I am sure with advantage to the patients, especially in the direction of shortening the long period of convalescence. I am sure it is useless to adhere too strictly to any time limit, and that the bets indication for the administration of a more liberal dietary is the demand for it on the part of the sufferer. When the patient says he is hungry, and wants something to eat, it is a pretty good sign that his digestive powers are in process of restoration, and that solid or semi-solid food is not likely to disagree with him.

I have recently had under my care at the Westminster Hospital a case of enteric fever of three months' duration, in which a persistently febrile temperature was maintained, and in which the adoption of a more liberal scale of dietary afforded the first indication of improvement. The case is so suggestive that I transcribe the notes in full:

C. S., a clerk, aged twenty-eight, was brought to the hospital in an ambulance on November 18, 1899, suffering from enteric fever. He had been ill since November 1, and had been nursed at home. On admission his temperature was 103° F., and he was in an extremely prostrate condition. No enteric spots were to be seen, and none appeared during the whole course of his stay in the hospital. No enlargement of the spleen could be detected, and, although he had been a heavy drinker, the liver was normal in size.

At eight P. M. on the night of admission the temperature was 103.6° F., and he had passed a typical typhoid stool. The urine had a specific gravity of 1,024, was acid in reaction, and free from sugar and albumen. Widal's reaction was obtained without difficulty. The patient was placed on three pints of milk, five ounces every alternate hour.

On the 21st the temperature fell suddenly to 99.8° F., and a few hours later there was a profuse hemorrhage from the bowel. During the following week the temperature ranged from 102° to 104° F., and the patient remained in a semi-comatose condition, with occasional attacks of delirium. The bowels were open either once or twice a day, the motions being of the same character. He was now on nine ounces of brandy in the twenty-four hours. On November 25 he was found to have some bronchitis, but there was no pneumonia. There was some expectoration, which was examined for tubercle bacilli, but none were found. On December 3—that is, on the thirty-third day of the illness—he had a sharp attack of diarrhea, and for the remainder of the week had from two to seven motions a day. The temperature rose from 104.8° F., and he had to be sponged two or three times a day. His pulse was usually one hundred and thirty, and of poor quality, and his general condition was unsatisfactory. On December 6, 7 and 8 he was given an enema of two ounces of mucilage of starch with half a drachm of tincture of opium. This was retained, but exerted no influence on the frequency of the motions. On December 9 he was ordered drachm doses of bismuth carbonate in milk, and this checked the diarrhea. During the following week the temperature ranged from 102° to 103° F., and the bowels were open from four to six times a day. In the next week the temperature was slightly lower, and the motions were less frequent. There was, however no improvement in his general condition, and he was evidently steadily losing ground. The only hopeful feature was that the three pints of milk and nine ounces of brandy were taken with unfailing regularity.

On Christmas Day, the fifty-fifth day of his illness, he was watched with unusual care to make sure that nothing was given him by visitors to the wards. On the following day, however, his temperature rose to 103.2° F. At noon on December 27 it was 103.4° F. At four P. M. he was given five grains of phenacetin. An hour later the temperature had fallen to 101.4° F. At eight P. M. he had a severe rigor lasting over half an hour, for which stimulants had to be given freely; the temperature fell to 100° F., rising again to 102° F. at midnight. On December 28, at four P. M., the temperature was 103.2° F., and he was given another dose of phenacetin five grains. This was followed by a prolonged and very severe rigor, and at eight P. M. his temperature was 96° F., a fall of 7.2 degrees in four hours. At midnight, however, the temperature was 104.2° F., showing a recovery of 8.2 degrees in four hours. On January 1, the sixty-second day of the illness, diarrhea returned, there being from six to ten motions in the twenty-four hours. Again the starch and opium enema proved useless, and again drachm doses of bismuth carbonate were successful. On January 8 the patient was in an extremely critical condition, and he was given champagne freely in addition to the brandy. Strychnine and digitalis were also administered from time to time. His temperature ranged from 102° to 103° F., his pulse was almost imperceptible, and the motions were passed constantly under him. For many days he had been unconscious, only muttering to himself at intervals. He was given an enema of two drachms of Warburg's tincture in an ounce of milk, but it was not retained. On the following day two drachms were given by mouth, and there was some improvement. On January 11 Warburg's tincture was ordered in doses of three drachms twice a day, and almost immediately the diarrhea was controlled, the temperature fell to 100° F., and the pulse improved in quality.

On January 13 a more liberal dietary was adopted, and the patient was ordered, in addition to his milk, a teaspoonful of Plasmon every alternate hour. This was taken without difficulty, there was no rise in temperature, and the bowels were moved only once in the twenty-four hours. This was practically the turning point in the patient's illness. The Plasmon was continued for a week, and at the expiration of that time the patient was given solid food. It was not, however, until January 20, the eighty-first day, that the temperature fell to normal.

From this day his appetite became ravenous, and on January 23 his dietary consisted of chicken and potatoes, beef tea (twelve ounces), bread, four eggs, custard pudding, Plasmon (six ounces), milk (ten ounces), brandy (four ounces), and port (four ounces). He was allowed up for the first time on February 8, the one hundredth day of his illness, and he subsequently made a complete recovery.

The duration of the case is remarkable, especially when it is remembered that it was not a question of relapse, for there was never any complete defervescence. It was not an example of post-typhoid pyrexia, for the diarrhea, with typical typhoid stools, continued almost up to the end.

The Warburg's tincture was undoubtedly useful in controlling the diarrhea, at a critical period of the disease, but the turning point in the main illness were the adoption of a more liberal dietetic treatment. What should be given under these circumstances is a matter respecting which there must be much difference of opinion. The great thing is to find something which is easily digestible, which will not irritate the intestines, and which has great sustaining power. Another point is that it must be palatable, and easy of administration. The white of egg, broths, jellies, sago, custard, and many others have been recommended, and all are useful. My best results, however, have been obtained with Plasmon. It is an albumen preparation made from milk from which the fat has been removed. It consists of the unaltered albumen of milk with eight per cent. of mineral salts, chiefly phosphates. It is a light, friable powder, free from odor or taste. It is soluble in milk, and in water, and a teaspoonful of the powder added slowly to a quarter of a pint of lukewarm water, milk or broth, and then placed over the fire and stirred makes a perfect solution. In enteric fever cases I give a teaspoonful in milk every alternate hour. When the temperature reaches the normal, I usually give it in the form of a custard made with milk and eggs, and baked slowly in the oven.

Apart from the dietetic treatment this case presents many features of interest. An enema of opium is useful in checking many forms of diarrhea, especially the diarrhea of advanced phthisis, but it is useless in the diarrhea of enteric fever; at all events in this case it proved of no avail. The carbonate of bismuth in drachm doses administered in milk gave excellent results, probably by its mechanical action, in covering over and protecting the ulcerated Peyer's patches. The maximum dose of bismuth carbonate given in the British Pharmacopœia is twenty grains, but this is far too small, and there is not the slightest danger in giving drachm doses or even half-ounce doses. At one time this salt contained traces of arsenic and tellurium—indicated by the "bismuth breath"—as impurities, but this is a thing of the past, and the drug is now supplied in a condition of perfect purity, so that it can be administered freely, without fear of producing toxic symptoms.

Many authorities speak highly of the value of antipyretic drugs in the treatment of entertic fever, and when the temperature persistently remains above 103° F., recommends the administration of phenacetin. Phenacetin, especially in from ten to fifteen-grain doses, is said to be free from danger, but this is not my experience, and in this case on two occasions, a single five-grain dose produced a condition bordering on collapse, and undoubtedly endangered the patient's life.

Another point of interest is the amount of alcoholic stimulant administered in this case. For nearly two months the patient took over three pints of brandy a week, with a very fair allowance of champagne and port. I am convinced that without the alcohol we should never have tided him over his illness. Of the quality of the brandy administered I know nothing; probably it was good of its kind, but not the best. In private practice I should have adopted the hint given by Dr. Wm. Murray, of Newcastle-on-Tyne, in his *Rough Notes on Remedies*, and ordered liquor brandy made from the finest grape, known as the champagne grape, grown in the Charente (Cognac) district). This old brandy is a most valuable remedy in cases of extreme exhaustion, when the patient is sinking, and food and ordinary stimulants are not assimilated. Fine old brandy is difficult to obtain, even in London, but specimens of the 1820 and 1828 vintages are still procurable, although of necessity they command a very much lighter price than the product usually sold under the name of brandy.—*Medical Brief*.

ACUTE HEMORRHAGIC TRANSVERSE MYELITIS AS A COMPLICATION OF TYPHOID FEVER.

The nervous complications of typhoid fever constitute a noteworthy characteristic of that disease. Headache, delirium, coma, hyperesthesia and hyperalgesia are not uncommon manifestations at the height of the fever, while motor paralysis and paresis, irritative motor phenomena, anesthesia, hyperesthesia, neuralgia and vasomotor and trophic disorders are not rarely complications. Generally these disturbances are of peripheral origin, and only a few cases are on record in which they have been found to be of central origin. A particularly interesting case of the latter variety, in which acute and rapidly fatal hemorrhagic transverse myelitis developed in the course of an attack of typhoid fever, has been reported by Schiff. The patient was a waiter, 19 years old, and on the ninth day of the disease loss of control of the sphincters of the bladder and the bowels developed. The sensorium was clear and there was no pain. On examination, absolute motor paralysis of the lower extremities of flaccid type was found, with abolition of the reflexes, and almost complete flaccid paralysis of the upper extremities. There was, besides, absolute anesthesia for all varieties of sensation in all four extremities, and on the trunk to the level of the third costal cartilage, in front, and the spinous process of the second dorsal vertebra behind. The respirations were 36 in the minute, and there was marked subjective and objective dyspnea. With each inspiration, the thorax, instead of being elevated and distended, was depressed and retracted; while the abdomen, at the same time, instead of being retracted, became greatly bulged forward. These latter phenomena were attributed to paralysis of all of the thoracic respiratory muscles except the diaphragm, and also of the abdominal muscles.

From the symptoms, it was concluded that the lesion was a transverse myelitis, situated between the fourth and fifth cervical segments. Death took place on the following day, a rapidly progressive bed-sore having meanwhile formed over the sacrum. Lumbar puncture five hours before death disclosed no abnormity. On post-mortem examination the intestinal lesions of typhoid fever in the second week were found, together with chronic tuberculosis at the apices of the lungs. The inner aspect of the spinal meninges was injected over the lower portion of the cervical cord, and the cord itself, at the level of the fourth, fifth and sixth cervical nerves, was swollen and spindle-shaped, deep-red in color, and softened. An inoculation from this situation remained sterile. After the cord had been hardened, numerous recent, small, indiscriminately distributed extravasations of blood were found throughout the spinal cord; also hemorrhagic infarction of the cord in the lower portion of the fourth cervical segment, involving almost the entire transverse extent of the gray matter, enormous dilatation of the vessel, and distention with blood from the fifth to the eighth cervical segment, advanced degeneration of ganglion-cells in the anterior horns of the cervical cord; even in parts free from hyperemia and hemorrhage, extensive areas of degeneration in the posterior columns in the lower third of the fourth cervical segment. No micro-organisms of any kind could be found. The absence of fatty granular cells and round-cell accumulation, and multiplication of nuclei is attributed to the early stage of the inflammatory process. The presence of marked parenchymatous changes —cellular degeneration, swelling of axis-cylinders, acute focal degeneration and marked vascular changes—dilatation, hyperemia, increased permeability—with hemorrhage, at widely separated portions of the cord, is thought to be indicative of the effect of a common noxious agent, probably the toxins of the typhoid bacilli.—*Journal A. M. A.*

A Case of Membranous Laryngitis Complicating Typhoid Fever.—Dr. Alexander Lambert presented the larynx from a person who had died of gangrenous laryngitis. The man was an alcoholic subject who had entered the hospital with a temperature of 105° F., marked dyspnœa, severe cough, and laryngitis. The leucocytes had been reported as being only five thousand, and on that basis a diagnosis of typhoid fever had been made. The next day the spleen had become palpable, and a profuse typhoid eruption had appeared. Toward the end of the third week the temperature had fallen very decidedly, and the man had shown every evidence of improvement. About this time the laryngitis had become much more severe. The fauces were red, and in the back of the pharynx was a slight grayish deposit. In the course of three days aphonia had become complete. Preparation had been made for a rapid tracheotomy should suffocation seem imminent. A tracheotomy had finally been demanded for an acute attack of suffocation, and this had given great relief. At midnight, however, the man had died suddenly of heart failure. At the autopsy a thick membrane was found extending from the epiglottis down into the larynx, and in the sulcus on the left side was an abscess cavity. There was also a peribronchitic inflammation which would probably have resulted in time in a septic broncho-pneumonia. There were some ulcers in the cæcum, which were practically healed. On searching the literature he had found that Keen had reported most of the cases, and that most of them had developed well on in the period of convalescence. Often the first symptom had been aphonia, or evidence of suffocation, and death had occurred almost instantly. In two of the reported cases the patients had recovered tracheotomy, and two with it. The gangrenous area extended from the epiglottis down two and a half inches into the trachea itself.

Dr. E. K. Dunham said that he had examined microscopically the specimens from this case. The most interesting of these had been the one taken from the pharyngeal surface of the aryteno-epiglottic fold. In this there had been a diphtheritic inflammation, and a line of demarcation had formed, causing a loosening of the necrotic tissue. A little beneath this line of demarcation there was an acute exudative inflammation with interstitial hemorrhage. Apparently, therefore, there had been two infections: an earlier one causing necrosis of the surface, and a later one causing an intestinal hemorrhage at the base of the granulation tissue. On the inner or laryngeal aspect of the aryteno-epiglottic fold there was a fibrinous exudate on the surface with granulations beneath, and a rather excessive diapedesis of red corpuscles. This exudate was probably due to the second infection. Over the cricoid the condition was very much the same as on the inner surface of the aryteno-epiglottic fold. Nearly all the micro-organisms found were diplococci or streptococci.

Dr. George P. Biggs asked why this case was described as a gangrenous laryngitis.

Dr. Lambert replied that the tissue in the upper and back part of the pharynx had been perfectly black and gangrenous.—*Medical Record.*

RESULTS WHICH HAVE BEEN OBTAINED BY THE ANTI-TYPHOID INOCULATION.—A. E. Wright and W. B. Leishman summarize the more important results which have been obtained up to date by the application of the antityphoid inoculations which were inaugurated at Netley in July, 1896, among the troops in the Indian service. The men under observation numbered 11,295, of whom 2,835 had been inoculated. The number of cases among the inoculated was 27, or 0.95 per cent., and among the uninoculated 213, or 2.5 per cent. The number of deaths was 5, or 0.2 per cent., among the inoculated, and 23, or 0.34 per cent., among the unprotected. Assuming that these figures would be the same relatively if applied to the entire army, the authors estimate that general inoculation would effect a saving of one thousand cases of typhoid fever and nearly two hundred lives. A detailed account is given of the methods which had been employed in the preparation of the vaccine.—*Medical Record.*

TYPHOID AFFECTIONS OF THE LARYNX.—R. W. Marsden reports four cases, three of which required tracheotomy. In one case the laryngeal affection came on at the end of the seventh week, and the inflammatory process left such thickening that the patient has to wear a permanent tracheotomy tube. In the second case the inflammation began at the end of the fourth week; in the third there was hoarseness and laryngeal obstruction in the fourth week. The fourth case was really one of superimposed diphtheritic inflammation, to which typhoid patients are specially predisposed.—*The Medical Chronicle, January,* 1900.

THE TYPHOID BACILLUS AND TYPHOID FEVER: SECOND GOULSTONIAN LECTURE.—P. Horton Smith considers the abnormal varieties of infection and the relation which the bacillus bears to the chief complications and sequelæ of the disease. He believes that we may have the fever without the intestinal lesions. In these cases the bacillus passes into the blood and becomes generalized in the organs without causing lesions in the bowel even though the latter may be the channel of entrance. He then discusses the various complications, paying special attention to bacteruria. Concerning suppurative conditions, he states that it is very common to find the bacillus in pure culture in the abscesses connected with bone, but in suppuration occurring elsewhere its presence is undoubtedly rare. Attention, too, is called to the persistence of the bacilli in the body after recovery. The patient may be in the mean time in perfect health, but under the influence of some passing stimulus the bacilli may resume their activity and give rise now to periostitis, now to osteomyelitis, or it may be to cholecystitis.—*Medical Record.*

Typhoid Fever at a Golf Club.—Alarm has been caused among the members of a golf club near Chicago by an epidemic of typhoid fever which has claimed as victims nearly fifty persons who frequented the club's greens. Thirty-three caddies are suffering with typhoid fever and one has died. Ten employees of the club are confined to their beds, one club member has died, and three more have been stricken. The water of a well on the links was much used by the golfers in preference to the regular supply for the club, which is drawn from artesian wells. When the outbreak of typhoid fever occurred, suspicion was directed to this well, and a bacteriological examination of the water showed the presence of Eberth's bacillus.—*Medical Record.*

The Continued Use of the Antiseptic and Eliminative Treatment of Typhoid Fever Without Any Deaths.—T. Virgil Hubbard, when called to a case of typhoid fever, usually commences by giving the patient a capsule containing calomel, gr. ss.; guaiacol carbonate, gr. ii.; podophyllin, gr. $\frac{1}{20}$ to $\frac{1}{40}$ every two hours for twenty-four to forty-eight hours, depending on the condition of the bowels. He continues this until he has secured four or five intestinal evacuations for two successive days, and then stops administering the calomel and adds gr. ss. of menthol to the guaiacol and podophyllin. Small doses of salts or Hunyadi water are given if there is a tendency to inactivity of the bowels. Decinormal salt solution is given per rectum when the skin and kidneys fail to act well. The proper administration of calomel is the point to which he desires to call especial attention, *i. e.*, small and often repeated doses. A typhoid patient can take more mercury without purgation or salivation than the same individual in health. He has treated twenty patients without a death.—*Medical Record.*

Appendicitis and Typhoid Fever.—H. A. Hare refers to two groups of cases which have never failed to puzzle him: (1) Cases in which symptoms, appearing in the neighborhood of the appendix, indicate the rapid development of appendictis, yet in which these symptoms gradually subside and the patient passes into an attack of typhoid fever; (2) cases already well advanced in the progress of typhoid fever which develop appendicular symptoms. Histories relating to each are given. In one the symptoms were typical of appendicitis, and operation was about to be done but was postponed. At the end of a week typhoid fever was fully developed. The possibility of typhoid infection of the appendix producing appendicitis is mentioned. In a boy aged nine years, the symptoms of appendicitis disappeared under ice-bag treatment and typhoid developed. He regards appendicular trouble in the early stages of typhoid as by no means rare. Ulceration in the neighborhood of the caput coli can readily produce tenderness, resistance, and other symptoms of appendicitis. Much attention should be paid to blood examinations.—*Medical News, July* 21, 1900.

Typhoid Infection.—Of the diseases coming to the human being by secondary contamination, typhoid fever stood out pre-eminently. It was well known that many epidemics of typhoid fever had been traced to the milk supply; within the last five years undoubtedly as many as fifty such epidemics had been traced to such a source. The reason for this was that the typhoid bacillus was capable of multiplying and growing in the milk, so that if only a few typhoid bacilli got into the milk, they would multiply rapidly. This was in sharp contrast with the behavior of the tubercle bacillius, which did not multiply and grow in milk. An occasional epidemic of scarlet fever or of diphtheria could be traced to secondary infection with the germs of these diseases, though no cases of this kind were on record in this country.—*Medical Record.*

THE HEPATIC FORM OF TYPHOID FEVER.—Dr. H. Roger relates two cases of typhoid fever which presented a sudden fall of temperature, the one on the twelfth, the other on the fourteenth day of the disease, followed on the succeeding day by vomiting of a bilious character and a diarrhœa with stools of a yellowish-green color. There was absence of meteorism, and no other indication of perforated intestine except progressive weakness, which ended fatally. At autopsy, the liver, in both cases, was found enormously enlarged, of a doughy consistence, and of a uniform reddish-yellow color; on section, the large vessels were seen to contain fluid blood while the parenchyma was bloodless, homogeneous, and resembled fatty degeneration. Microscopic examination and chemical analysis confirmed this opinion. Experiments on dogs by injecting acetic acid into the common bile duct brought about a similar hypothermia with marked histologic changes in the liver. Dr. Roger concludes that a sudden sharp fall of temperature occurring at the time of the roseolar outbreak must find its explanation in the degeneration of the liver. This, together with a severe jaundice, bilious diarrhœa, and vomiting of bile, speaks for the clinical entity which the author describes as the hepatic form of typhoid fever.—*N. Y. Medical Journal.*

THE IMPORTANCE OF THE DISINFECTION OF THE URINE OF TYPHOID-FEVER PATIENTS.—The city board of health has issued the following circular:

It is the earnest desire of the department of health to direct the attention of physicians to the great importance of the disinfection of the urine of individuals suffering from typhoid fever. It has been known for a long time that the *Bacillus typhosus* is occasionally to be found in the urine in this disease. Recent observations, however, have shown that the bacilli are present in the urine in a large percentage of all cases. In fact, it is probable that in fifty per cent. of the cases the typhoid bacilli are present in the urine at some stage of the disease, and at some times in almost incredible numbers, estimated at many millions to the cubic centimeter. In the majority of cases the bacilli appear in the urine rather late in the course of the disease and soon disappear, but in probably ten per cent. they persist throughout convalescence, and exceptionally for months and even years afterward.

The presence of typhoid bacilli in the urine is frequently not attended by any change in its appearance or composition, nor do they necessarily produce any appreciable lesions in the kidneys or any portion of the urinary tract. The urine may be perfectly clear and limpid, absolutely normal in appearance, and yet contain large numbers of typhoid bacilli. In other instances there are evidences in the urine of changes in the kidney or of inflammation in the pelvis of the kidney or bladder. The urine under certain conditions appears to constitute a good culture medium for the bacilli, and they may multiply in it after it is passed. From its fluid nature it is readily splashed about and may thus infect the hands and persons of the patients and attendants, and more especially the bedding, bedclothing, etc., so that in cases of typhoid fever the greatest care should be taken to disinfect it as well as the stools. In fact, the former often contains the bacilli in larger numbers than the latter, and may be a greater source of danger, as the bacilli are not only present in larger numbers, but persist for a longer time after recovery.

Epidemics of typhoid fever can usually be traced to contamination of the water or food supply, and any single case may prove the starting point or focus of an epidemic. The recent observations in regard to the infectious character of the urine readily explain the occurrence of some of the isolated cases and outbreaks which it is sometimes difficult to trace to their source.

The urine from cases of typhoid fever may be readily disinfected by almost any of the various chemical disinfectants, as it is fluid and there are no solid masses to be penetrated, as in the case of fæces. The disinfection of the urine should be continued until the restoration of health is complete. The best disinfectant for this purpose is carbolic acid; it is effectual, cheap, and easily obtained. Urine to which has been added one third of its volume of a one-to-twenty solution of carbolic acid is thoroughly disinfected in a few minutes. The best method is to keep the urinal or bedpan partly filled with the disinfecting solution at all times. In this way any germs present in the urine are almost instantly destroyed.

It is believed that careful disinfection of the urine and fæces in typhoid fever would eventually produce a sensible diminution in the number of cases of this disease occurring in New York city, and a corresponding reduction in the death-rate from it.—*N. Y. Medical Journal.*

INOCULATION FOR TYPHOID FEVER.—Some results based upon a sufficiently large scale are at last forthcoming as a first installment of data whereby to estimate the value of this procedure. The *Polyclinic* for March refers to results recently published in the *British Medical Journal* of unspecified date, derived from the Indian army. Professor Wright, of Netley, inoculated nearly three thousand British troops in India, in which country typhoid is always rife, and is said to cause thirty-seven per cent. of all deaths in the British army of occupation. The three thousand inoculated men were selected from an aggregate of about eleven thousand, the younger, more unseasoned men, being recent arrivals, having been selected for the inoculation as being those in greatest danger of contracting the disease. The results obtained give food for reflection. All the men were kept under observation. Of those not inoculated, 2.5 per cent. contracted the disease, while of the inoculated, only 0.95 per cent. have been attacked. Of the eight thousand uninoculated soldiers, 0.35 per cent. have died from typhoid, only 0.2 per cent. of the three thousand inoculated having succumbed; in other words, the disease rate in the uninoculated has been approximately treble, and the death-rate approaching double, that in the inoculated. These figures may be added to the mass of accumulating evidence as regards other diseases which tends to establish the general truth of the principle ot prophylactic inoculation. The subject is at present only in its infancy.—*New York Medical Journal.*

THE CARDIAC COMPLICATIONS DURING CONVALESCENCE FROM TYPHOID FEVER.—J. Mollard has made fifty-two observations bearing on this question, and concludes that in four-fifths of the cases cardiac troubles are found, in about one-half of which there is a true syndrome having the following features: (1) Effacement or attenuation of the precordial impulse, slight displacement of the apex in cases in which it can be localized; (2) disturbances of rhythm; tachycardia, embryocardia, arrhythmia; (3) change in the sounds of the heart, medio-cardiac systolic souffle, *bruit de galop*, enfeeblement of the first sound or both sounds together.—*La Presse Médicale,* January 10, 1900.—*Medical Record.*

INOCULATION WITH TYPHOID VACCINE AS A PREVENTIVE OF TYPHOID FEVER. By Dr. R. W. Marsden.—The wroter reports the results of the inoculation of the staff of the Monsall Hospital, Manchester, with typhoid vaccine to prevent infection from typhoid-fever patients. Up to the time the vaccine was used four or five members of the staff of the hospital contracted typhoid fever every year, from 1895 to September, 1899. Beginning in September, 1899, fourteen nurses were inoculated with the vaccine. From that time until the date of writing (March, 1900) no cases of typhoid fever have occurred among the staff. There was one case of ephemeral fever, which, if it was typhoid, was very mild. After inoculation the nurses were allowed to remain in bed for twenty-four hours, and returned to duty the following day.—*New York Medical Journal.*

DELAYED SUPPURATION DUE TO TYPHOID BACILLUS.—For a long time a discussion was waged as to whether or not the typhoid bacillus is a pyogenic organism; but the evidence would seem to have decided the question in the affirmative, the bacillus being found in pure culture in various suppurative processes. Sometimes such lesions have become manifest only many years after the primary infection. In one instance, the bacillus was found in a case of suppurative cholecystitis more than eighteen years after the original disease; in another, in a case of axillary abscess, seven years afterward; in a third, in a case of osteomyelitis, six years afterward; and in a fourth, in a case of abscess of the tibia, four years afterward. To these a further case is added by Bush and Symes in which an abscess of the tibia persisted for seven years after an attack of typhoid fever. The patient was a women, twenty-five years old, in whom, during convalescence from an attack of typhoid fever at the age of eighteen years, a painful swelling appeared in the upper and anterior portion of the left tibia, which was incised, with the discharge of a quantity of pus. The wound was completely healed at the end of three weeks, but almost immediately a second collection of pus accumulated and it was discharged spontaneously. From time to time there was a discharge from this wound, until within two years. When the patient came under observation, she presented a doubtful swelling over the front of the upper third of the left tibia at the site of an old scar, with much tenderness in the neighborhood. An incision was made over the scar, and pieces of bone were gouged away until the center of the bone was reached. A small bead of pus then appeared, and on the removal of more bone, an abscess-cavity containing a small sequestrum was disclosed. The cavity was scraped, and the sequestrum removed. Recovery was uninterrupted, and the severe pain that had been present for many years was relieved. On microscopic and cultural examination of the pus, the typhoid bacillus was isolated. In explanation of the manner in which the foci of suppuration are caused in cases of typhoid fever, it is suggested that the typhoid bacillus passes from the bowel into the portal system, is carried to the liver, and enters the biliary channels, and finally the gall-bladder, where it may excite suppurative cholecystitis, or form the starting-point of a biliary concretion. Sometimes, however, general blood-infection takes place, and local foci of suppuration are excited, either by the lodgment of bacteria in tissues of low vitality, or by masses plugging minute vessels.—*Medical Record.*

Typhoid Fever Among the British Troops in South Africa.—Enteric fever, the greatest scourge of armies in the field, is raging on an extensive scale in South Africa. Probably, too, its scope is wider than is publicly reported, as the war authorities for reasons of expediency will doubtless be averse to making all the facts known, and will use their own judgment as to how much of the truth shall be suppressed. The reports, however, that have come to hand from various sources show that the situation is serious. Mr. Fripp states in a letter to the *British Medical Journal* that at the time of writing there were nearly two thousand cases of typhoid fever in Bloemfontein alone. In Kimberley, Mafeking, and Ladysmith the disease during the sieges of those towns was rife, especially in the last-named place. This condition of affairs was for obvious reasons more or less unavoidable, but it was hoped that when the opportunities arrived, by changing the location of the camps frequently and by using every possible sanitary precaution a widespread outbreak might be avoided. These sanguine anticipations have unfortunately not been realized. *The Journal of Tropical Medicine,* June 15, says: "We have lately counted the number of deaths in the South African army from typhoid fever in one of the official lists of deaths from disease recently issued, and we find no fewer than one hundred deaths from typhoid fever occurred between May 30 and June 6, and of these no fewer than twenty-three occurred on June 4. It is plain from these figures alone that the army is suffering from an epidemic of typhoid fever, and, since the deaths are not reported from one station but from many stations, that the infection is widespread.

For some time after the commencement of the South African campaign the health outlook appeared decidedly favorable, but the unexpected prolongation of the war, the long sieges of Ladysmith, Kimberley, and Mafeking, and the lengthened stay of large bodies of men in the same locality, have produced the inevitable results. One disappointing feature in connection with typhoid fever in South Africa has been the failure of inoculation as a preventive. Surgeon-General Jameson reports that the results from inoculation among British soldiers going to the front has been the reverse of encouraging, and does not warrant the belief that a means of conferring immunity against this disease has been at last discovered. He further said that he had called for a return of sickness during the siege of Ladysmith, and the result was certainly somewhat singular and rather difficult to explain away. It would appear from the figures in question that inoculation against enteric fever was unfavorable to the incidence of the disease, but rather favorable to the case mortality.

Dr. Victor Vaughan, in the oration on state medicine delivered by him at the late meeting of the American Medical Association, dealing with the prevalence of and mortality from typhoid fever in our military camps in 1898, has made a valuable contribution to the literature on the subject. Among other causes he lays down the following: "Camp pollution was the greatest sanitary sin committed by the troops in 1898, inadequate space allowing a large body of men to remain on one site too long. Flies served as carriers of the disease, and infection was probably disseminated through the air in the form of dust." These last two theories are peculiarly applicable to the condition of things in South Africa, where both dust and flies at certain seasons of the year are more in evidence perhaps than in any other portion of the world."

THE TREATMENT OF TYPHOID PERFORATION OF THE BOWEL.—Dr. W. W. Keen (*Journal of the American Medical Association*, January 20), in a paper read in the discussion on Typhoid Fever at the meeting of the New York State Medical Association in October, 1899, in which he records a hundred and fifty-eight cases in tabular form, says that his views on the operative treatment of typhoid perforation may be summarized as follows: 1. The surgeon should be called in consultation the moment that any abdominal symptoms indicative of possible perforation are observed. 2. If it is possible to determine the existence of the perforative stage, exploratory operation should be done under cocaine anæsthesia before perforation, shock, and sepsis have occurred. 3. After perforation has occurred, operation should be done at the earliest possible moment, provided: 4. That we wait till the primary shock, if any is present, has subsided. 5. In a case of suspected but doubtful perforation, a small exploratory opening should be made under cocaine to determine the existence of a perforation, and if hospital facilities for a blood count and for immediate bacteriological observation exist, their aid should be invoked. 6. The operation should be done quickly, but thoroughly and in accordance with the technique already indicated. 7. The profession at large must be aroused to the possibility of a cure in nearly, if not quite, one third of the cases of perforation, provided speedy surgical aid is invoked.—*New York Medical Journal.*

INTESTINAL ANTISEPSIS BY CHLORIN WATER.—Fitzgerald's treatment for typhoid fever is the one recommended by Yeo. The following is the formula for the preparation: Forty minims of strong hydrochloric acid is introduced into a 12-ounce bottle, containing 30 grains of potassium chlorate. The chlorin gas is at once liberated. The bottle should be tightly corked from the first. After it has become filled with the greenish-yellow gas, pure water is poured into the bottle little by little, shaking well after each addition, until the bottle is filled. To disguise the acridness of the chlorin, one ounce of syrup of orange peel may be added, if desired. Of this mixture, one or two tablespoons may be given, in a little water, every two, three or four hours, according to indications. The odor of the chlorin is often detected in the breath and exhalation from the skin where the medicine has been properly given and it is desirable that it should be so. If necessary in any given case, 24 to 36 grains of quinin muriate may be added to the mixture, but usually it is hardly necessary. In some cases it may be well to give strychnin or digitalis, and for insomnia codein will be of benefit. Fitzgerald has made this his standby to secure intestinal antisepsis, and he gives it night and day from the first until the temperature falls to normal and remains there. The bowels must first be freely moved by small and often repeated doses of calomel, followed by saline laxatives if necessary. He says give calomel—to prevent diarrhœa if there be none, to cure it if it be present. Other methods of treatment are mentioned, but these are, he thinks, the most certain remedies.—*Medical Mirror.*

THE SIGNIFICANCE OF HEREDITY.

By JOHN L. DICKEY, A.M., M.D., Wheeling, W. Va.

This last quarter of the nineteenth century is the age of iconoclasm. It is natural that it should be, for it is the period of the most marked progress in all lines of human knowledge and experience that the world has yet witnessed. Oldest beliefs have been closely questioned, strongest faiths have been dimmed by passing clouds of doubt, biggest idols have toppled uneasily on their strong pedestals, darkest corners of ignorance and superstition have been illumined by the searchlights of science.

In no realm of knowledge has there been more decided advances and more readjusting of seemingly well-established theories than in that of medicine. The studies and researches of Gross and Langenbeck in pathological anatomy, the earnest and assidious work of Virchow and Koch in pathology, the laborious and honest experiments in chemistry and biology conducted by Pasteur and Roux, have all contributed to form a new era in medicine and have compelled us to adopt new premises in our efforts to reach the right conclusion in the consideration of disease and the best means and methods for its prevention or amelioration.

The standpoint from which disease is regarded now is widely separated from the one of half a century ago. No better proof could be adduced to show this fact than the changes in the nomenclature of disease. The causes of death as frequently given at that time were dropsy, consumption, paralysis, apoplexy, jaundice, inflammation of the bowels; now we are more apt to find cirrohosis of the liver, nephritis, heart failure, tuberculosis, caseous pneumonia, cerebral hemorrhage, cerebral softening, appendicitis, colitis, typhlitis, pyæmia and septicæmia. In other words, many causes of symptoms have been recognized and classified that were formerly unrecognized and unclassified, and hence the discovery of so many new diseases that are as old as mankind.

The time has fully arrived when we should endeavor to reconstruct our ideas of heredity in disease. It is seldom now that we hear of inherited disease. The term hereditary disease has gradually given place to inherited tendency to disease. It is true that we can trace scrofula back through three or four generations of a family, but might we not seek in vain for the cause on which the scrofula depended, or for any particular dyscrasia that caused it. Is not the most frequent cause of death in grandparents set down as old age or unknown? And do we not have to content ourselves most frequently with the age and not the cause?

In addition to this uncertainty in securing reliable data in family history is the unreliability of evidence in ascertaining the cause of death of grandparents, or even the parents in many cases. Some men can give the exact cause who take an immediate interest in such matters; most medical men, also, would naturally know the true cause, or seek to know it; but the majority of applicants do not know the exact cause of death of immediate ancestors, nor can they be expected to know it from such an uncertain source of information as the death certificate. To illustrate the difficulty of getting the correct information: A medical man who carries considerable insurance would probably never have gotten any had he answered according to the death certificate given by the physician. The cause of death of the applicant's father was given as consumption, but the applicant knew that it was caseous pneumonia, following hepatitis, caused by overwork and overworry as a bank cashier during the troublous times of the civil war. The cause of death of his oldest brother at age 33 was also given as consumption, when in reality it was due to a general failure consequent on a life of invalidism and helplessness caused by congenital paralysis.

Before the germ theory of disease was suggested, and before the existence of a bacillus tuberculosis was suspected, there was a well-founded and quite general belief in the contagiousness of consumption. If consumption is at all contagious, should not the fact of a parent, grandparent, uncle or aunt having died of the disease exert little weight in sizing up a risk, and would it not be more proper to inquire whether the applicant's wife were living and in good health, or whether he went south with his brother who had died of consumption, and whether he nursed him and occupied the same room? In the near future, undoubtedly, the contagiousness of cancer will be critically and scientifically considered, and probably decided upon. Have we any right now to list it among the hereditary diseases when we reflect on what an approbium it has always been to our profession; and when we consider that the very name of cancer is a confession of our absolute ignorance; and when we come across frequent cases where it is impossible to differentiate between the benign and malignant growth, or between the malignant neoplasm and the syphilide may we not also look forward confidently to a fuller knowledge of that dreadful condition, epilepsy, with fair hope of removing it from the list of hereditary diseases? The frequent cures of the Jacksonian form by the trephine, and the earnest work and thoughtful experiments being done by the alienists would certainly give ground for such hope.

This questioning and suggesting does not at all conflict with a full belief in the inexorable law of heredity and atavism. It would be folly to doubt for a moment the existence of constant examples of reappearances in the second or third or fourth generation, or back as far as the memory of man reacheth, of peculiarities of feature, physique, color of hair, color of eyes, tone of voice, idiosyncracies of taste, of smell, and even of touch. An extreme example of heredity might be found in Elsie Venner, that weird and most probably improbable creation of Oliver Wendell Holmes. A more recent and not at all improbable example of heredity is the reappearance of the red hair and large nose of the Elphberg family, after a hundred and fifty years, in that thrilling and fascinating story, "The Prisoner of Zenda," by Anthony Hope. But we need not go to fiction for such examples. Any one of us could easily observe frequent cases of striking examples of this law of heredity resemblance. The old, or middle-aged, family physician, who has always lived in the same community, can close his eyes and recall case after case of the peculiar repeating of nature as she continues on her circle. He can recognize his playmates in their grandchildren by the familiar form, or feature, or gait, or tone of voice, or trick of manner.

Not only are these noticeable physical peculiarities of the individual reproduced, but also the mental and moral and spiritual traits. The keen intellect, the logical mind, the bright and sunny or the morose and gloomy disposition, the nervous or lymphatic temperament, all keep reappearing with the same certainty in nature's endless rotation, modified, it is true, by education, surroundings and various other influences, but changed never. There is also no doubt of the heredity of a certain subtle something which we call vitality. It makes longevity in a line by giving the individuals a peculiar power of resistance to a disease or injury that would naturally be fatal. Conversely, some families inherit the quality of non-resistance, and melt away under a disease or injury of only moderate severity; they slip out of our hands before we have fully decided on the diagnosis, and before we had begun to think of a prognosis.

Diseases are not inherited, but the tendency towards certain diseases may be continued down a line, owing entirely to the inherited physique, temperament or complexion. Consumption is not inherited, but the narrow chest, the slender figure, the rounded shoulders, in short the restricted lung space, is hereditary. And yet how much this may be modified, if not entirely changed, by that modern adoption of an almost lost art, physical culture; by that general, all-round development of the body that results from careful training in our numerous gymnasia; by the judicious selection of climate; by a wise attention to all the simple and effective rules of hygiene that are so commonly taught and so much more generally observed than formerly. Insanity or inebriety is not inherited, but the nervous or the bilious temperament certainly may be. Yet the avoidance of undue excitement, the exercise of judgment in the choice of a business or profession favorable to an even life that may not be too full of strain and worry, the total abstinence from stimulant; all these and more may so modify the inherited nervous temperament that insanity or any of the other complex and hardly understood nervous diseases may be escaped. A known danger may be easily shunned. All of the sons of an inebriate father are frequently found to be total abstainers. They do not inherit the drink habit; they may not even have a taste for intoxicants, but the fear of an inherited habit teaches them to touch, taste and handle not. Erysipelas is not an inherited disease, but the thin skin and light complexion that we have inherited from one of our forefathers is accompanied with the same tendency to skin diseases and the same susceptibility to ivy poison and erysipelas that was such a source of worry to our ancestor. Knowing this, we try to avoid the poison ivy and are chary in the use of iodine or turpentine or any other irritant that does not molest nor make afraid our black-atavised brother who takes after the other side of the family.

It would not seem, then, that the usually imperfect and incomplete and unsatisfactory family history given by the applicant should have much weight in the consideration of the risk by the medical director of life insurance. It bears its relation, it is true, to the sum total of the points for and against the applicant. But the facts learned about his personal condition and personal history are much more important ones. It would seem to be desirable to learn as much as possible about his domestic surroundings, the health of his wife and of his children; his social habits and surroundings, his financial habits and standing; in short, all that can be learned about the man and his manner of life. The more that can be learned about him the less need be asked about his ancestors and their diseases.

No topic that is allied in any degree with the science of medicine is more replete with interest than this same question of heredity. Prenatal influences, with their remarkable results; atavism, with its startling occurrences, and all of the interesting and mysterious and unexplainable incidents that follow from this constant law of nature, will continue to attract the close attention and research of the intelligent observer and the earnest student. But the cold facts and their practical application in the calculations of the actuary will combine with observed results and force hereditary diseases further and further into the background.

The personality of the applicant will continue to grow in importance, as the selection of lives for insurance keeps approaching the plane of a science; and as the personality grows in importance the matter of heredity will have less and less significance.—*The Medical Examiner and Practitioner.*

THERAPEUTICS.

[From the *Journal of the Amer. Med. Association.*]

Neuralgia.

℞	Ammonii chloridi	℥ iii
	Tinct. gelsemii	ʒ ii
	Ext. glycyrrhiz. liq	℥ ss
	Aquæ chloroformi, ad	℥ vi
M.	Sig. Dose ℥ ss every four hours until the pain is relieved.	

℞	Butyl-chloral hyd	ʒ i
	Ext. cocæ liq. (miscible)	ʒ vi
	Glycerini	ʒ ii
	Tinct. aurantii	ʒ ii
	Aquæ dest., q. s. ad	℥ vi
M.	Sig. Dose ℥ ss every four hours.	

℞	Antipyrin	ʒ ii
	Tinct. cascarillæ	
	Tinct. card. comp.	
	Glycerini, āā	℥ ss
	Aquæ ad	℥ vi
M.	Sig. Dose ℥ ss every four hours.	

TO RELIEVE NEURALGIA OF PHTHISICAL PATIENTS.

Capitan prescribes the following ointment. A very small quantity is lightly applied, and the part covered with some impermeable material and absorbent cotton. The application must be discontinued as soon as the skin becomes even slightly reddened:

℞	Guaiacol	
	Methyl salicylatis, āā	gr. lxxx
	Ext. belladonnæ	gr. iiss
	Ext. opii	gr. iv
	Vaselini	
	Lanolini, āā	℥ ss
M.	Sig. External use.	

In very acute cases, menthol (15 grains), antipyrin (30 to 40 grains), or potassium bromid (80 grains) may be added.—*Louisville Monthly Journal of Medicine and Surgery.*

Orchitis.

℞	Hydrargyri chlor. mitis	gr. iii
	Pulv. ipecac	gr. x
M.	Sig. Take at once.	

℞	Hydrargyri ammoniat	ʒ i
	Cerati simp	℥ i
M.	ft. ungt. Sig. Apply as directed.—*McElroy.*	

℞	Ammon. muriatis	ʒ ii
	Spr. vin. rect.	
	Aquæ, āā	℥ ii
M.	Sig. Use as a lotion.	

℞	Morphin sulphatis	gr. viii
	Hydrarg. oleatis (10 per cent.)	℥ i

ASTHMA AND ITS TREATMENT.

By A. E. MAY, M.D., New Haven, Conn.

It is doubtful if any other human affection has had more widely conflicting theories advanced in explanation of the real nature and causation of the symptoms manifested than has the disease known as "spasmodic" or bronchial asthma. Dr. James F. Whittaker pronounces it "a paroxysmal dyspnœa caused by a peculiar catarrh, with spasm of the bronchi." Dr. Sidney Martin (*Deutsche Medizinal-Zeitung*, July, 272) says: "Spasmodic asthma is a nervous affection, and occurs primarily as well as secondarily." Williams, also, advocated the neurotic theory. Traub wrote of hyperæmia; Clark of diffused hyperæmic swelling; and Webber of vaso-motor turgescence.

More recently, however, owing to various lesions found by pathologists in the dead room and disclosures made by physical diagnosis, the causation of asthma has been directed to organs found affected—as the lungs, heart, brain and cord; until, finally, the very existence of the disease as an independent affection has been denied altogether, and it is to-day regarded as merely a symptom of some constitutional affection.

In the etiology of this troublesome malady, therefore, modern classification recognizes only the indirect or intermediate causes; e. g., (1) those operative through the nervous system (centric-excitomotor), and (2) those operative through the blood, as in gout, syphilis, renal diseases, etc. The diathetic nature of asthma is a fact now quite generally accepted; the theory or Haig being, that the causative factor of the symptoms, in the majority of cases, is uric acid in the blood and the high arterial tension it produces—a condition brought about by a disturbance of the equipoise between the functions of nutrition and excretion; i. e., a faulty metabolism.

After five years of the most terrible sufferings, the writer, having carefully studied the disease, is firmly convinced that asthma is due to an abnormal biochemia of the blood, which impairs its oxygenation; that the lungs and nerves take no active part in its etiology, other than the performance of their physiological duty; that the blood dyscrasias which figure most prominently in the causation of asthma, are the anæmic, lithæmic and leukæmic.

About six years ago I developed asthma, which soon assumed such proportions as to compel me to relinquish active practice altogether. Attacks became more and more frequent and increased in severity—relief coming only when I had reached an extreme degree of exhaustion. One attack followed another, and in turn was treated by every remedy known to the regular, as well as the advertising physician, with only temporary relief. After many months' suffering of this character, I observed a series of prodromal symptoms, warning me of an approaching attack—such as headache, occipital pain, stiffness of muscles of the neck, muscular pains, neuralgias, great mental depression, etc., these symptoms recurring and recurring until it seemed as though there were no place for me on earth.

I finally learned that when a severe attack of asthma came on, a full dose of calomel followed by a draught of Hunyadi Water gave me quicker and more substantial relief than anything yet I had previously obtained, and it dawned upon me that my trouble was perhaps due to deficient elimination; that my asthma was produced by a condition of lithæmia, not sufficiently marked to be called "gout," but all sufficient to account for the symptoms heretofore mentioned.

It seemed to me, after every relief obtained from the diuretic and cholagogue action of the drug employed, that I must have been suffering from the effects of certain toxins absorbed into the circulation from some portion of the alimentary tract, or, perhaps, left in the system from inefficient action on the part of the excretory organs. In other words, my condition appeared to be that of auto-intoxication brought about probably by a defective working power inherent in the organs primarily concerned in the processes of digestion and excretion—especially the liver and kidneys.

The object, then, of treatment in asthma, should be to encourage such a mode of life as will tend to procure and maintain a normal condition of the blood. No disease in the whole domain of medicine, unless it be rheumatism, is more benefited by a proper diet, or more aggravated by an improper one, than is asthma. Those foods should be selected which are most rapidly assimilated and readily oxygenated, and first upon the list is fresh, rare beef—roasted or otherwise. I believe that rare beef not only generates a blood favorable to oxygenation, but one that is unfavorable to the osmotic outpourings of mucus so characteristic of the asthmatic.

Baths, light, altitude, etc., are also prominent factors in curing the asthmatic. Altitude may, in many cases, be advantageously substituted for drugs. In choosing a location for an asthmatic, however, the main object, other than altitude, is to avoid malarial districts, for there is no disease more destructive to the cellular constituents of the blood than is malaria. Some eight months ago my attention was called to thialion, a remedy much lauded as a solvent for, and to promote elimination of uric acid. I used the drug four weeks, taking each morning a large teaspoonful of the salt in a gobletful of hot water, and drinking, besides, during the day, three pints of Apollinaris water.

The above constituted the whole course of treatment, the results of which were simply astonishing. For five months I have had no asthmatic seizure, no pain, no headaches, and am able to walk rapidly about with no shortness of breath nor dusturbance of any character. I have since used thialion in several cases of asthma, and results in all of these instances were uniformly good. The value of the remedy would seem to lie, not altogether in its virtue as a solvent of uric acid (for there are many other such solvents), but largely in its power to enhance cellular action of the liver—incidentally increasing the flow of bile and initiating intestinal peristalsis. In other words, it not only possesses the properties of certain other remedial agents in removing from the system the uric acid already formed, but, in addition, owing to its peculiar cholagogue action, serves as a prophylactic agent in preventing the formation of any more—for that the liver is the principal uric acid factory in these lithæmic conditions is a fact now quite generally accepted.

In this brief paper it has not been my intention to mystify, theorize, nor idly speculate, but rather to emphasize the value of thialion as a remedy in uric acid toxæmias; and to deal, also, with a few well-established facts in such manner that some of my friends in the medical profession may be able to cope with the advertising physician in the treatment of asthma.

PROFESSOR MANGES ON HEROIN.

The extensive use made of heroin in clinical practice during the past one and one-half years, and the abundant literature that has already appeared on this new preparation, enables us to formulate some positive conclusions as to its definite status in the materia medica. One of the most striking features of this drug is its remarkable action upon the respiratory organs, its effects consisting in the reduction of the number of respirations, with an increase of their force. Besides this, it exerts a sedative influence upon the air passages, as evidenced by the alleviation of cough and irritation. Heroin has also been employed as a general analgesic, but it is yet too early to form a positive idea of its utility in this direction. It is worthy of note that in the literature thus far published very little reference has been made to after effects, and these, for the most part, have been of mild degree and observed chiefly in cases where the dose has been excessive. Like any active remedy, heroin must be used with proper discrimination, and in doses adapted to the age and to the indications present.

Professor Manges (*New York Medical Journal*) who has made a most exhaustive clinical study of heroin, writes as follows on this point: "The general conclusion is that these effects have occurred in a surprisingly small percentage of cases, when it is borne in mind that in so many instances the larger doses (one-sixth of a grain) have been employed. Even the effects which have been recorded are only relatively simple, and in no case was there any serious effect noticed. These after effects are decidedly of less frequent occurrence and of milder degree after heroin than those from morphine or codein." If attention is paid to these points no special precautions are necessary in the use of heroin, except such as apply to any remedy in the Pharmacopœia. To obtain the best results it should be administered in much smaller doses than the opium alkaloids, and these may later be increased, if necessary.

Professor Max Einhorn (*Philadelphia Medical Journal*) concludes on the ground of his experience: "It will be readily seen from the above that we possess in heroin a very valuable therapeutic agent. It principally allays cough and eases respiration; but it has also general analgesic properties which render it of benefit in most painful affections. Except slight dizziness and occasional dryness in the throat, which I found but rarely, I have never seen any unpleasant symptoms, even from a prolonged use of heroin, and I can recommend it as a very valuable remedy.—*Canadian Journal of Medicine and Surgery.*

BOOK REVIEWS.

THE TREATMENT OF FRACTURES. By Charles Locke Scudder, M.D., Surgeon to the Massachusetts General Hospital, Out-Patient Department; Assistant in Clinical and Operative Surgery in the Harvard Medical School, assisted by Frederic J. Cotton, M.D. Pp. 483, with 585 illustrations. W. B. Saunders, Philadelphia. $4.00.

The authors of this volume deserve congratulation for many things. In the first place the title is frank. The book does not purport to be a treatise upon fractures, but rather a brochure on their treatment. It is to be noted, however, that the matter of diagnosis has not been disregarded, some of the most interesting and original pages of the book being taken up by discussions of the latter.

In the first chapter, that upon fractures of the skull, we find that the recognition of the condition occupies very much more space than its treatment. The section upon treatment omits operation procedures and outlines briefly the precautions necessary in cases where no such interference is indicated. Asepsis is insisted upon.

In the chapter upon fractures of the bones of the face the illustrations of fractures of the nasal bones, and both illustrations and discussion of fractures of the inferior maxilla are excellent.

The chapter upon fractures of the spine contains a table stating nerve lesions following injury to definite vertebræ; some beautiful plates, an outline of the indications for operation and of the method of applying a plastic jacket when expectant treatment is to be pursued.

The chapters on fractures of the ribs, sternum and pelvis are remarkably brief.

In the chapter on fracture of the clavicle the author points out that more than one-third of all such fractures occur in children under five years old and devotes a special section to its treatment in children. His remark that the dressings are to be frequently removed—as often as every third day, he says—while it may seem over careful, we believe is wise. It is especially apropos in hot weather.

The chapters upon the fractures of the bones of the upper extremity have seemed to us the most complete and satisfactory ones in the book, and especially is this true of that upon fractures of the humerus.

In the chapters upon the fractures of the lower extremity, the discussion of the more common fractures is all that could be desired. The space devoted to treatment is disproportionately brief, the author apparently having preferred not to wander in the wilderness of special apparatus but rather to discuss the method he considers most generally suited to each condition.

The short chapter upon fractures of the bones of the foot is unsatisfactory.

A chapter upon the Röntgen ray in its relations to the diagnosis and management of fractures, by E. A. Cadman, seems to us to be a most helpful explanation of the uses and limitations of a resource imperfectly understood.

The chapter upon the use of plaster of Paris is full of useful hints.

A short review of the ambulatory treatment of fractures condemns it and a bibliography closes the book. The book has pleased us very much.

It has appeared to us that the author's matter, like his pictures, has been taken from life. Much that is traditional has been passed over: much that is generally known has been left unsaid. It has seemed that the author has endeavored to record that part of his personal experience in the observation and handling of real conditions which will be of interest and value to the practical man.

A word of praise must be separately given to the illustrations. There are 483 pages in the book and 585 pictures, and it is not alone their number but their excellence that is remarkable. They are real pictures of real things. The X-ray tracings are the only illustrations in the book that approach the method of diagrammatic representation so much in vogue in the older medical books.

These X-ray tracings, the author explains in his preface, "have been the subject of careful study. Each tracing represents the combined interpretation of the plate made by skilled observers who were in every instance familiar with the clinical aspects of the case."

These tracings constitute, in our opinion, one of the most valuable and suggestive parts of the book.

The make-up of the book is of the best. Paper, print and binding cannot be criticised.

The author, the illustrator and the publisher deserve the thanks of the profession.

A PRACTICAL TREATISE ON SEXUAL DISORDERS OF THE MALE AND FEMALE. By Robert W. Taylor, A.M., M.D., Clinical Professor of Venereal Diseases at the College of Physicians and Surgeons (Columbia University), New York; Surgeon to Bellevue Hospital, and Consulting Surgeon to the City (Charity) Hospital, New York. Second Revised Edition, with 91 illustrations and 13 plates in color and monochrome. Lea Brothers & Co., 1900. Price $3.00.

The second edition of Dr. Taylor's book has come to our hand.

The sexual disorders of the male are treated in systematic manner. The anatomy and physiology of the male genital tract are first discussed; the anatomy rather fully and with some beautiful illustrations, the physiology much more briefly. Following this is a chapter upon the seminal fluid, particularly the variations of its microscopical variations in health. Psychical impotence, that symptomatic of various diseases of the genital tract, as well as forms due to a variety of causes grouped by the author as atonic, are briefly considered.

Organic impotence is considered much more fully with a series of plates.

Sterility in the male is thoroughly discussed, and its causes and their treatment, where any is possible, pointed out.

Chapters on chronic inflammation of the urethra, prostate and seminal vesicles follow.

Discussions, in a number of short chapters, of varicocele, masturbation, sexual excesses, spermatorrhea, sexual worry, etc.;conjugal onanism, etc., etc., close that portion of the book devoted to the male.

The rest of the book is fragmentary. Sterility in the female, vaginismus, masturbation in the female and a large number of new growths and hypertrophies of the vulva which may lead to sterility, fill its remaining pages.

The author considers the diseases touched upon from the point of view of their effect upon the sexual life of the subject, and more than that, in the main, as they may be concerned in the production of whatever sexual symptoms is under consideration. It is not, and does not aim to be, a book upon diseases of the genital apparatus.

The text is interspersed with illustrative cases. The illustrations are many of them remarkable in the extreme.

It seems to us a book containing much that is useful, but a great deal that is merely curious and unusual—particularly is this true of the chapters on organic causes of impotence in the male and of sterility in the female—chapters containing nearly 100 out of the 425 that make up the book.

The paper is excellent, the typography and the execution of the many illustrations and plates is the best.

Progressive Medicine. Volume II, 1900. A Quarterly Digest of Advances, Discoveries and Improvements in the Medical and Surgical Sciences. Edited by Hobart Amory Hare, M.D., Professor of Therapeutics and Materia Medica in Jefferson Medical College of Philadelphia. Octavo, handsomely bound in cloth, 401 pages, with 81 engravings. Lea Brothers & Co., Philadelphia and New York. Issued quarterly. Price, $10,00 per year.

This publication does not seem to us to take the place of the "Year Book" as a volume of reference nor in a more than superficial way to compete with it at all. It is a series of timely articles by well-known men on what is new in medicine and surgery. It is not so complete a record as the Year Book, but it is pleasanter reading, because it lacks the peculiar chaotic quality of most digests that makes one think of what the man who started in to read Webster's Unabridged said—It was an improving story, but somehow he lost the thread.

One will not lose interest in reading "Progressive Medicine," and he will gain the knowledge of authoritative opinion as well.

We have not space to detail more than a few good things from the book.

Dr. Coley on Abdominal Surgery, including Hernia, treats especially of gastroplication and gastroplexy for dislocation without stenosis and of operation for ulcer, both before and after rupture. The question as to when to operate in appendicitis is fully discussed. The article on hernia includes an account of Bassini's own technique advances in plastic surgery of the colon, the surgical treatment of diseases of the liver are considered, and two very interesting subsections are devoted to the diagnosis of abdominal tumors and the detection of abdominal calculi by the X ray.

The section on Gynecology, by Doctor John G. Clark, is an interesting miscellany of recent work in that line.

The Section on Diseases of the Blood, diathetic and metabolic diseases—diseases of the glandular and lymphatic systems, by Professor Sturgel, devotes especial attention to leukæmia, diabetes and gout.

The section on Opthalmology, by Dr. Jackson, fully covers the ground.

The promise of the first volume is fully lived up to in this, the second. The book should have a large sale.

A TEXT BOOK OF THE MEDICAL TREATMENT OF DISEASES AND SYMPTOMS. By Teston Tinard, M.D. (Lond.), F.R.C.P., Professor of the Principles and Practice of Medicine, King's College, London—adapted to the United States Pharmacopœia by E. Quin Thornton, M.D., Demonstrator of Therapeutics, Pharmacy and Materia Medica, Jefferson Medical College, Philadelphia. 627 pages. Lea Brothers & Co., Philadelphia and New York. Price, $4.00, net.

THOMPSON'S PRACTICAL MEDICINE. A Text Book of Practical Medicine. By William Gilman Thompson, M.D., Professor of Medicine in Cornell University Medical College, New York city; Physician to the Presbyterian and Bellevue Hospitals, New York. In one octavo volume of 1,010 pages, with 79 engravings. Lea Brothers & Co. Price, cloth, $5.00; leather, $6.00, net.

CLINICAL EXAMINATION OF THE URINE AND URINARY DIAGNOSIS. A clinical guide for the use of practitioners and students of medicine and surgery. By J. Bergen Ogden, M.D., Instructor in Chemistry, Harvard Medical School, etc. Illustrated. Pp. 408. W. B. Saunders & Co., Philadelphia. Price, $3.00, net.

ATLAS AND EPITOME OF DISEASES CAUSED BY ACCIDENTS. By Dr. Ed. Golebiewski, of Berlin, authorized translation from the German, with editorial notes and additions by Pearce Bailey, M.D., author of "Accident and Injury, their Relations to Diseases of the Nervous System." Pp. 536. 40 colored plates and 143 illustrations in black. W. B. Saunders. Price, $4.00, net.

Atlas and Epitome of Gynecology. By Dr. Oskar Schaeffer, Private-docent of Obstetrics and Gynecology at Heidelberg—authorized translation from the second revised and enlarged German edition. Edited by Richard C. Truurs, A.M., M.D., Gynecologist to the Methodist Episcopal Hospital and to the Philadelphia Hospital, etc. Pp. 272, with 207 colored illustrations on 90 plates and 62 illustrations in the text. W. B. Saunders & Co., Philadelphia. Price, $3.50, net.

International Clinics. Volume II. Tenth Series. J. B. Lippincott Company, Philadelphia.

INTESTINAL REST IN TYPHOID.

It is an axiomatic principle in both surgery and medicine that a congested or inflamed part needs rest.

The surgeon recognizes this when he immobilizes the fractured bone and retains the fragments in apposition: the physician likewise appreciates the great importance of this principle in cases of gastric ulcer when he feeds his patient by the rectum in order to avoid irritating the inflamed part, either directly, or by exciting gastric motility. Although typhoid fever is essentially a systemic disease, its characteristic local lesion is the intestinal ulcer, which should, as far as possible, be kept at rest. Milk, which has heretofore been regarded as the only proper exclusive food, is, as a recent writer says, "not a liquid diet, but a deceptive solid"—capable of filling the small intestines with dense indigestible curds which scratch and irritate the ulcerated bowel, and in addition, ferment and cause gaseous distention, tympanites, etc. Liquid Peptonoids, on the other hand, is open to none of these objections. Its administration affords rest to the ulcerated intestinal tract, because:

1st. It is predigested and therefore promptly absorbed from the stomach, leaving no residue for the bowel to dispose of.

2d. No curds are formed as from milk.

3d. It is absolutely aseptic and cannot cause fermentation, tympanites or increased peristalsis, resulting in diarrhea.

4th. It has the requisite nutritive power to maintain life for weeks and even months, especially in febrile conditions.

Another advantage of Liquid Peptonoids is its palatability, which renders it grateful to the patient, especially when given ice cold.

From one to two tablespoonfuls every two, three or four hours, should be given as necessary. When an efficient intestinal antiseptic is required, as it very frequently is in this disease, Liquid Peptonoids with creosote provides both food and remedy at one and the same time. The unpleasant taste of the creosote is almost entirely abolished in this combination. Each tablespoonful contains two minims of pure beechwood creosote and one minim of guaiacol, its active principle.

GAILLARD'S MEDICAL JOURNAL.

A MONTHLY JOURNAL OF MEDICINE AND SURGERY

Scientia et Veritas Sine Timore.

PUBLISHED BY THE NEW YORK MEDICAL PUBLISHING CO.,

106 William Street, NEW YORK.

All communications, of either business or editorial character, should be addressed to Gaillard's Medical Journal, 106 William St., New York.

Articles for publication will be received with the understanding that they are contributed exclusively to this journal. Reprints will be furnished at actual cost, orders for which should accompany the manuscript. Authors of accepted articles may receive twelve copies of the issue in which they are published. Necessary illustrations will be furnished without expense to authors when suitable drawings or photographs are furnished.

EDITORIAL.

Typhoid Fever.

The importance of the subject of typhoid fever justifies us, we believe, this month in devoting nearly all of our space to its discussion. The very important paper which is presented as a leader by Dr. Victor C. Vaughn, the well known pathologist of Michigan, which is in fact the oration on state medicine before the annual meeting of the A. M. A., held in Atlantic City, June, 1900, is well worthy the perusal of our readers. The work of Dr. Vaughn in the study of this disease among the soldiers during the Cuban War of 1898, was well done, and he is so well equipped for this work that his conclusions are worthy of the most careful consideration.

Dr. Vaughn makes no more important point than the one wherein he insists that greater authority should be given medical officers in matters relating to the hygiene of camps. Commanding officers of camps should not be permitted to have any option in the matter of carrying out instructions of the medical director. Indeed, in all matters pertaining to hygiene and medical and surgical management the medical director should be supreme.

* * * *

It seems incredible that there should be such universal neglect of the simplest rules of health, as related to typhoid fever, upon the part of municipalities and town authorities. The water supply of cities is probably the most potent means by which typhoid fever is spread. We must continue to emphasize the thought that we should never take any chances by drinking suspected or uncertain water that has not been boiled. Filtration of water is not sufficient; of course it removes much of the filth from drinking water, but the germs of typhoid fever are known to escape through the majority of filters. A temperature of 212 degrees is destructive to the typhoid fever bacillus, and when we know this to be the case we should insist upon taking no chances.

* * * *

It is well to remember that the "Widal test" of typhoid fever is not applicable before the fifth or seventh day, and sometimes it is not successful before the second or third week. In exceptional cases it is not applicable at all, so a case may be typhoid fever and not respond to this test. After all, we are safe in saying that the majority of continued fevers that will not yield promptly to purging and quinine are typhoid fever. Indeed, a fever that continues into the second or third day should be placed on the suspected list.

* * * *

One of the important things in the beginning of every acute attack of disease is to secure complete purgation, even though the patient and attendant may report the bowels as having moved. Such evidence is more or less uncertain and is unworthy of acceptance; we should give the patient the benefit of the doubt and purge freely. It is of vital importance, whether the case is typhoid fever or some other disease. If we have a case of typhoid fever, or any other infection, a bowel loaded with fecal matter, ptomaines and poisons in general, in addition to the specific infection, we have a case complicated and exaggerated by auto-infection.

Practitioners have frequently found, even though the attendants had reported that the bowels had moved well, that upon the administration of brisk cathartics enormous quantities of offensive fecal matter would be passed. It is easy to appreciate the disadvantage to the patient, locally and generally, where typhoid ulceration is aggravated by fecal accumulation. Thorough purgation, followed by drinking large quantities of water and high-up irrigation of the lower bowel will give us an empty alimentary canal, surely a condition much more favorable for the victim of typhoid fever or any other infection.

* * * *

No Food.

In the beginning of every acute disease absolute starvation, or rather the complete withholding of food, is desirable for at least one week. It will be found difficult to restrain the family and attendants from stuffing these victims of disease, the average layman being thoroughly possessed of the idea that it is his religious duty to stuff his patients, even though the aversion for food be great. As a matter of fact, nature kindly when unable to take care of food announces her inability by loss of appetite, and this should be respected. The drinking of large quantities of drinking water is always safe and should be encouraged. Beef teas, broths, and slops in general, are valuable only on account of the water they contain. It is questionable whether the extractives present in the so-called beef teas are not objectionable, being chiefly urea, and surely never more than stimulating.

In the second week food may be given, and of all foods good pure cow's milk is to be preferred; it is well, however, to modify it with Mellin's Food mixed with water. If there be much evidence of disturbance of the alimentary canal, the milk should be peptonized, and in Fairchild's Peptogenic Milk Powder we have the means always at hand by which this can be accomplished most excellently. As an invalid food Condensed Milk may be used, particularly with children, as the sweetness of it appeals to them, and it is much better in meeting such emergencies than as a continued food for infants. Bovinine and Milkine, both in different ways, are splendid liquid foods in typhoid fever patients.

* * * *

Diet.

The diet then for the first two or three weeks should be liquid in character, and either quite digestible or predigested. With a view to guard against flatulency and at the same time help nutrition, Caroid and Charcoal Tablets are very helpful to digestion, and are most excellent, as relievers of gut distention. Vegetable digestive ferment Caroid, as is well known has the advantage of digesting all foods, in all menstruums, whether alkaline, acid or neutral, and we can thus feel sure that it is active throughout the entire alimentary canal. During the convalescent stage, after the fastigium has been passed, some solid food such as rare beef and toast with milk is given, with which the Caroid acts most excellently. A liquid essence of Caroid has been presented to the profession which is most convenient.

* * * *

Mouth Toilet.

The typical symptoms of typhoid fever that used to be discussed 25 or 30 years ago are rarely met with now. It is exceptional to find sordes on the teeth, the brown coated tongue and other evidences of a neglected mouth and intestinal canal; bed sores too are a thing of the past. In this connection it must not be forgotten that whether the fever be high enough to call for the all over bath or not, sponging or some form of bath should be given twice a day, as the functional activity of the skin is best kept up in this way. The proper use of tooth brushes and mouth disinfectants should be looked after, no matter how mild or severe the case may be.

* * * *

Reduction of Temperature.

The control of fever is important where it ranges high. The belief of some, that fever is only a symptom expressive of a condition, and that its treatment and reduction only mask the conditions, is not worthy of consideration. However one may theorize, a temperature beyond 103° should be reduced, for the sake of the comfort of the patient if nothing else, and besides it will be generally admitted that long continued high temperatures are dangerous. The world over, even in the most intemperately theoretical hospitals, the "Brand" bath has been softened in its application; it has been realized that the shocking, almost brutal application of ice cold water is not called for. The best plan is to place the patient in water at the temperature of the body and gradually reduce it to about 85°, leaving the patient in the water probably ten minutes. The wet pack, sheets wrung out of fairly cold water, wrapped around the patient, the same surrounded with a blanket, and this continued ten minutes will often be as efficient as the bath. Continued frequent sponging is annoying to the patient and reduces the temperature but little.

The application of water should be made most thoughtfully and intelligently. A fussy trained nurse can do more harm to a victim of typhoid fever, by her persistent and constant attention, than good. Some patients have an aversion to water, particularly children, the bath having a very demoralizing effect. In such cases the physician can often accomplish the acquiescence of the patient where the nurse or the family cannot, but this annoyance should not be administered too often.

On general principles the coal tar products should not be given often under any condition, and yet there are times when their judicious administration, acompanied by some gentle, diffusible stimulant, is helpful. The coal tar remedies, whichever one may be given, in a reasonable dose and washed down with 15 or 20 drops of aromatic spirits of ammonia well diluted, occasionally gently reduce the temperature, calm and tranquilize the patient, and secure much needed rest.

* * * *

Intestinal Hemorrhage.

Among the emergencies of typhoid fever, intestinal hemorrhage is greatly to be dreaded. We are safe in saying that it does not occur as frequently as formerly, no doubt owing to the more careful guarding of the alimentary canal. When it does occur ice cloths should be applied to the abdomen and turpentine in 15 or 20 drop dose should be given every two or three hours. This is undoubtedly one of the most satisfactory diffusible stimulants, as well as anti-hemorrhagic remedies that we have. If the patient has been restless it should not be forgotten that opium is a splendid controller of bleeding and that it calms peristaltic activity.

When a hemorrhage has occurred it must not be forgotten that it comes from some of the ulcerating glands of Peyer in the ileum, and thereafter the food should be absolutely liquid and predigested.

* * * *

Intestinal Perforation.

Perforation of the bowel is much less frequent than formerly. The sudden increase of the pulse, jumping up to 140 beats a minute; the quick appearance of pain in the belly, the sudden collapse, all unmistakably point to the necessity of immediate surgical interference.

The recent investigations and writings of Dr. Keen, Dr. Hare and others are very encouraging. Our duty to our patients requires that we keep in close touch with a good abdominal surgeon, who at a moment's notice would respond and give our patient the one chance of life. The successful results of laparatomy and closure of the perforating ulcers, though not numerous, have been sufficient to justify the proceeding. It is the one chance of life to the victim of typhoid fever, and he should be given the full benefit.

* * * *

Convalescence.

The doctor should guard his patient carefully through the period of convalescence, instructing him to be satisfied to go slow for many days after all fever has disappeared.

Three things should be guarded against:

1. Overexertion, physical and mental.
2. Overeating.
3. Chilling of the surfaces and consequent checking of secretion.

Asheville Meeting of the Mississippi Valley Medical Association, Oct. 9-11, 1900.

Let it not be forgotten by the physicians of America that the second largest medical association in America, the Mississippi Valley Medical Association, is to have its banner meeting this year at Asheville, N. C. A triple good will be accomplished by all who attend this meeting. First of all, the doctor will be fully informed with regard to the beauty and attractiveness of Asheville as a health resort. He will have definite knowledge and be able to be of distinct service to his patients who wish to know something in regard to the place. Second, he will be benefited himself physically, mentally and generally, by the few days outing in this royal health resort. Third, he will have secured the intellectual benefit of the mental, scientific and social mix-up with a large number of the best doctors in America.

The executive committee of the association, and the local committee of arangements, are all working to the end that a superb meeting and a delightful time be had. Headquarters will be at the Battery Park Hotel, and all the sessions will be held in the parlors of the same. The pharmaceutical exhibits will be in the same building, so there will be no scattering and everybody will know where to find everybody else.

The Close of Vacations.

The season of rest and recreation is drawing to a close, and let us hope that the doctors the country over have had their recreation along with the rest.

After forty every individual should take his yearly outing. He will do more and better work in ten months than in twelve. Doctors are entitled to an annual vacation of fifty-two days, for they have no Sunday or holiday.

The thought that all work and no play makes Jack a "dull boy" (and no pay too, quite often) applies to doctors as well as other workers.

GAILLARD'S MEDICAL JOURNAL.

Vol. LXXIII. NEW YORK, OCTOBER, 1900. No. 4.

MALARIA.

Diagnosis.—Albert Woldert[1] insists that the plasmodia, hæmatozoa, or sporozoa of malarial fever are best studied in a *fresh* specimen of the blood. A $\frac{1}{12}$ oil-immersion lens and mechanical stage are preferable. In examining the fresh specimen the microscope should be taken to the *bedside* of the patient and the blood maintained at the body-temperature; carrying the specimen from one room to the other frequently destroys it. A warm stage may be easily made of a long strip of copper plate adjusted to the stage of the microscope and tapering toward one end. This is laid on a piece of flannel or felt, and a small alcohol-lamp placed at its tip. In the summer months the slide should rest on a piece of flannel or felt laid on the stage of the microscope.

The tertian parasite is the best for studying the general characteristics of the malarial hæmatozoa, the blood being taken an hour or two before the expected chill.

With a linen towel the lobe of the ear or end of the finger should be cleansed, first with alcohol, then with water. The warm stage is to be properly adjusted so that the specimen may be preserved at a temperature of about 98.2° F. With a needle or tenotome a quick thrust is to be made into the lobe of ear or end of finger, and with the linen cloth, the first drop or two of blood that makes its appearance is to be brushed away. The cover-slip is then held in the blades of the forceps, and touched to the summit of the drop of blood (without touching the skin). One edge of the cover-glass is quickly applied to the slide, and allowed to fall by its own weight, when the blood should spread out smoothly. One should never press downward upon the cover-slip to assist the blood in spreading. It is time wasted to try to examine a bad specimen. It is always well to collect two or more samples before beginning the examination. The specimen should be examined immediately after it has been withdrawn from the circulation. Several specimens should be collected at different periods of the fever, because the parasites are not always found. As a rule, only a limited number of malarial parasites are discovered in each specimen of blood obtained.

The *Plasmodium malariæ* has a turning, twisting, rotary, or flattening-out movement, and in the later stages contains fine pigment-granules in active motion.

It is very common to meet with foreign material and "blood-dust" in the plasma, which at times may be mistaken for the non-pigment hyaline parasites of malarial fever. The bodies may have an active Brownian movement.

---

[1] *Medicine*, May, 1900.

In beginning this study one should confine his attention to the parasites within the red cells. In looking for the tertian parasite any enlarged and decolorized red corpuscle should at once arrest the attention.

Except in the æstivo-autumnal type of fever, a few doses of quinine will cause all organisms to disappear from the blood.

That which takes the first rank as a source of error in this examination is failure to obtain a good specimen of blood. The three most essential requisites for a good specimen are: (1) a puncture deep enough to make the drop of blood appear immediately [pressure aids this], (2) clean cover-slips and slides, and (3) dexterity of movement in transferring the specimen.

Another frequent source of error is to mistake the vacuoles of red cells for hyaline malarial parasites. During the process of necrobiosis the red cells take on a peculiar tremulous or wavy motion, which is imparted to the contained protoplasm. At this time vacuoles of different sizes and shapes may be seen within the red corpuscles. In this clear space no pigment, of course, is seen, and it is motionless. In stained specimens prepared by overheating they are very common.

After the death of the red corpuscle, small, round, colorless (hyaline) bodies ($\frac{1}{20}$ to $\frac{1}{4}$ the size of a red cell) with a sharp or clear-cut outline, may frequently be seen within the red cell. They are motionless. These bodies are abundant in the stained specimen improperly prepared by over-heating, and may also be found in specimens prepared by fixation in ether and alcohol. In focusing up and down they change in appearance and color, while the malarial parasite does not do so.

Occasionally the hæmoglobin will collect in certain portions of the erythrocyte, assuming peculiar shapes (mostly oval), but without motion.

The amœboid motion of the white blood-corpuscle (polymorphonuclear leucocyte) is not infrequently mistaken for the full-grown malarial parasite. Its nuclei will, of course, be easily recognized after some practice.

Minute, colorless, highly-refractive granules may be seen free in the plasma; the so-called "blood-dust." They generally result from disintegration of the red cells and leucocytes. Fat particles and ordinary dust may also be found in many specimens. These foreign elements often have an extremely rapid Brownian movement. The particles usually take the course of the spaces between the corpuscles, but not infrequently roll around and lodge immediately over a red cell. Peculiar motile microorganisms which make their habitat on the normal skin may also be introduced in making the puncture. It should be remembered that the hyaline segmenting malarial parasites are seldom found free in the plasma.

Small reddish particles of destroyed hæmoglobin of different sizes and shapes may also be seen in the plasma in normal blood.

Foreign bodies are differentiated from the malarial parasite by focusing up and down, when the former material is seen to have sharp edges and changes its color and shape, in contradistinction to the malarial parasite, which does not change its shape on change of focus, but becomes easily visible or fades away gradually in the protoplasm of the red corpuscle. In searching for the malarial parasite the best focal point seems to be that at which the shaded central portion of the red cell is most plainly visible.

The malarial parasites are, as a rule, relatively few in number in each drop of blood obtained, and frequently fifteen minutes may be required to find a single specimen.

After learning the characteristics of the different forms of plasmodia in the fresh specimen of blood, the staining methods may be used. The puncture is made as advised in the fresh specimen, the clean cover-slip held in the forceps is quickly touched to the summit of the drop and then immediately placed upon another slip, which is at once separated by sliding the upper one along in the plane of their surfaces.

The blood is then fixed by heat, preferably in a dry sterilizer or oven. In the absence of the sterilizer, one may secure a plate of copper fifteen or eighteen inches long, one-eighth to one-sixth inch thick, and three inches wide, and heat for fifteen or twenty minutes by placing at one end a Bunsen burner or oil-lamp provided with a double wick, or Rochester burner. The entire apparatus must be well protected from all draughts by means of a wide piece of tin or be placed in a closed room.

The proper temperature to heat the specimen is from 239° to 248° F., which is determined by collecting a few drops of water in a pipette and throwing somewhat forcibly along the upper surface of the copper plate in the direction of its cooler extremity. The drops of water soon cease rolling, and the point where the drop suddenly stops will generally correspond to about 248° F. (or 120° C.). It is safer to place the drop of blood an inch or two nearer the cooler end than this point.

After the blood has been thoroughly dried in the air it is then placed (smeared side upward) upon this plate at the point designated and allowed to remain from fifteen to thirty minutes, continuing the heat all the time. It should then be removed and stained. Only the purest stains (Grübler's) should be used. One of the best and most reliable stains is that of eosin and methylene-blue.

After removal from the plate the specimen is covered over with a ¼ to ½ per cent. solution of eosin in 50 per cent. of alcohol and stained in the cold from three to five minutes. It is then washed in water for a minute (eosin stains the red cells intensely) and the excess of water is removed carefully with a blotter. After the specimen is dry it is then counter-stained (also in the cold) for five minutes with a saturated aqueous solution of methylene-blue, washed for half a minute, dried with blotting paper or in the air, and mounted in Canada balsam. By this method the red cells are stained a pinkish color, the plasmodia blue, and the pigment remains very dark. The nuclei of the white blood-corpuscles stain blue.

The three most common errors committed in examining the stained specimens are, perhaps: (1) failure to collect the blood properly, (2) carelessness in placing the stain upon the specimen, and (3) overheating the specimen.

As in the fresh specimen, small, round, unstained, highly-refractive bodies may be seen in the red corpuscles. These products result from the process of necrobiosis of the red corpuscles. They are very abundant in overheated specimens. When the blood has been stained by Ehrlich's method many small pinkish dotlets are observed.

The kary kinetic figures of the leucocytes should not be mistaken for the malarial parasites.

If crescent or ring-shaped organisms are found, this fact at once denotes infection by the æstivo-autumnal parasite.

Another frequent error made by beginners is to mistake the clear spaces (vacuoles) in the red cells for malarial parasites.

Very large, irregular, jagged hyaline crystals and irregular, deep-blue masses are seen free in the plasma, which are doubtless due to disintegrated blood-corpuscles.

C. N. B. Camac[2] remarks that for years malaria has been made the scapegoat for all conditions of the character of which one may be uncertain. Every patient with an intermittent fever associated with malaise of uncertain origin—especially if such a patient resided in a malarial district—was said to be suffering from malaria. Malaria is to-day one of the few diseases that can be positively diagnosed. No case should be diagnosed as malaria unless the *Plasmodium malariæ* has been found in the blood. Examinations for this organism need a microscope and the knowledge how to use it. Unfortunately the blood is not frequently submitted to this test. If this were done, beginning cases of tuberculosis and intermittent fevers in pneumonia would be much less frequently called malaria.

Patrick Manson[3] thinks that few diseases are so easily diagnosed as malaria. There are three pathognomonic tests which, intelligently applied, are absolutely infallible. There is the clinical test of periodicity, but diurnal periodicity is of no value in the diagnosis of malaria. A periodicity of twenty-four hours is shared with malaria by many diseases, but it is otherwise with a periodicity of forty-eight hours or seventy-two hours. Only one pathological condition exhibits this feature and that is the malarial infection. Any disease exhibiting a tertian or quartan periodicity is certainly malarial. But one should not put any reliance upon quotidian periodicity in the diagnosis of malaria; it is most misleading, and constantly gives rise to mistake. If a patient has well-marked rigor followed by pyrexia, and that by profuse perspiration, and if this occurs day after day, the conclusion must not be jumped at that the case must be malarial because of the periodicity and because the patient is from a tropical country. In diagnosis quotidian periodicity should be absolutely ignored. A patient with well-marked abscess of the liver has been personally seen, the patient himself being a medical man, and yet because he had rigor, pyrexia, and perspiration day after day he was sure that he was suffering from malarial fever, and he was taking quinine in consequence. Nearly all suppurative processes are attended by a fever with a quotidian periodicity more or less marked. Osler says that he never sees a case of abscess of liver that has not been drenched with quinine, the diagnosis of malaria having been made doubtless in consequence of the quotidian recurrent pyrexia. Many diseases—ulcerative endocarditis, surgical kidney, gallstones, syphilis, tubercle, almost every disease with febrile associations—may exhibit quotidian periodicity. But it is otherwise with tertian and quartan periodicity; these are both absolutely pathognomonic of malaria. Then there is the therapeutic test; the test by quinine. Quinine properly administered in a case of malarial disease in forty-eight hours is, in personal experience, invariably followed by abatement of the symptoms. If a patient is given quinine for seventy-two hours and there is no abatement of fever, the diagnosis should be reversed: the patient is not suffering from malaria. There is no use in persisting with quinine for days and weeks on the supposition that the case is malaria. The malarial parasite can be poisoned with quinine as certainly as a man can be poisoned with arsenic.

---

[2] *Jour. Amer. Med. Assoc.*, July 28, 1900.

[3] *Lancet*, July 21, 1900.

It is not sufficient, however, to rely on the therapeutic test, because in many instances there is no time to wait for its application, as in grave cerebral attacks. By the time the diagnosis is established the patient might be dead. It is necessary to have some more rapid means of arriving at the conclusion of what is the matter with the patient. That is supplied by the microscope; it is an immediate and invaluable test for malaria. Practitioners in tropical countries fail in their duty to their patients if they do not acquaint themselves with the application of the microscope in the diagnosis of malaria. For the practitioner nowadays to undertake the care of life in tropical countries and to be ignorant of the use of the microscope in malarial diagnosis is positively culpable. The microscopical test is easily applied. All that is required is a high-power lens, a $\frac{1}{12}$ objective, a fair illumination, and two or three slides, some cover-slips, and a patient. In five minutes one can tell whether the patient is suffering from malaria or not.

C. F. Craig[4] finds that from observations of æstivo-autumnal malarial fever in this country and Cuba, comprising both microscopical and clinical study under exceptional conditions as regards opportunity and material, he is forced by the logic of facts to confirm Marchiafava and Bignami's conclusion regarding this type of malarial fevers. There undoubtedly exist two varieties, at least, of the malarial parasite giving rise to these fevers: one having a cycle of development of twenty-four hours, and giving rise, in uncomplicated cases, to a fever having quotidian paroxysms; the other, having a life-cycle of forty-eight hours, and giving rise to a fever with tertian paroxysms, in which the temperature-curve is peculiar and characteristic.

Ronald Ross[5] points out that in old cases of malaria there may be a secondary form due probably to enlargement of the liver and spleen: a form of a continued type not directly due to the parasites, and not amenable to quinine. This form has been noticed also by Vandyke Carter, Kelsch, Kiener, and others, and was personally observed while studying kalaazar. Torti was the first to point out that quinine should be given before the access. The drug should be continued for three months after infection, and it is best given in solution.

J. A. Capps[6] has had four interesting cases of malaria associated with acute abdominal pain. The patients were all women and were sent to the hospital for operation for acute salpingitis, gall-stone colic or gastric ulcer with perforation, extra-uterine pregnancy, and appendicitis, respectively.

---

[4] *Phila. Med. Jour.*, April 7, 1900.

[5] *Brit. Med. Jour.*, September 1, 1900.

[6] *Jour. Amer. Med. Assoc.*, August 4, 1900.

The presence of the tertian parasite in each case demonstrated the presence of malaria, and the subsidence of all symptoms after the administration of quinine confirmed the diagnosis. The cause of the pain must be either (1) some co-existing disease, (2) a neuralgia from malarial poison, or (3) both combined. In not one of these cases was there a co-existing disease in an *acute* state. This point was indicated by the absence of leucocytosis, and illustrated the value of the leucocyte-count. The neuralgias of malaria may be divided into (1) the toxic, occurring during the febrile attack, associated with the presence of the plasmodia in the blood, and due to an intoxication with the malarial poison, and (2) the post-infective, which are the result of anæmia and cachexia. The importance is emphasized of examining the blood for malaria and of counting the white blood-corpuscles in all obscure acute abdominal diseases. Malarial neuralgias require large doses of quinine.

Etiology.—W. S. Thayer[7] considers it as proved:—

1. That the malarial parasite possesses an extracorporeal cycle which is completed in the stomach-wall of mosquitoes of the genus *anopheles*.

That members of the genus *anopheles* can transmit malaria from infected to non-infected individuals.

At the present moment this is the only proved method by which malaria may be acquired. This theory explains most conditions associated with malarial infection; reports showing the protective efficacy of mosquito-nets even in the most malarial districts are rapidly accumulating; there is no serious evidence in support of any other theory.

The evidence at present possessed tends to favor the theory that the mosquito can acquire the infectious agent only from man. The statement is often made, that in tropical Africa, for instance, exploring parties may spend considerable periods of time in the uninhabited interior without illness, even though the regions may appear, from outward conditions, most unhealthy. It is only on their return to the seacoast, to districts where the surroundings would appear to be better, that the outbreaks of malaria occur. This hitherto inexplicable fact becomes clear if one assumes that in the woods, though all conditions are present for a spread of the disease, the mosquitoes are uninfected and so harmless; it is only on coming back to the settlement where infected mosquitoes occur that the disease breaks out. Studies by Celli and Delpino, by Grassi, by Bastianelli and Bignami, of epidemics in small communities, have shown that the vernal cases of malaria are almost all relapses; that during the month of June the *anopheles* begin to be active; that, about a month after the beginning of the activity of the *anopheles*, the true epidemic of malaria begins, starting apparently in foci about individuals who have recently suffered from relapses of the disease. During the season in which *anopheles* prevail the malarial epidemic flourishes, only to disappear again with the disappearance of the mosquitoes.

Prophylaxis.—The Liverpool School of Tropical Diseases[8] states that gnats and mosquitoes are scientifically knows as *culicidæ*. The commonest genera are called *culex* and *anopheles*, and it is important to know how to distinguish between them, because *anopheles* carry malaria, while the *culex* appears to be harmless. *Anopheles* have a slim, elegant body, shaped like that of a humming-bird moth; a small head, and a long, thick proboscis. When seated on a wall, the axis of the body is almost at right angle to the wall, and they generally have spotted wings. The *culex* has a coarser body, with a thick *thorax*, or chest, and a thin proboscis. When seated on a wall the tail hangs downward, or even points a little toward the wall, and the wings are generally quite plain. The wings of the *anopheles* are spotted along the front edge.

---

[7] *Phila. Med. Jour.*, May 5, 1900.

[8] *New Orleans Med. and Surg. Jour.*, May, 1900.

The larvæ of the two kinds are equally different from each other. Those of the *culex* float when at rest on the surface of the water, suspended by their tails, and their heads hanging downward, and when disturbed they wriggle at once to the bottom. But those of *anopheles* float flat on the surface of the water like sticks, and when disturbed wriggle on the surface with a backward skating movement.

As a rule, man-eating mosquitoes like to breed close to houses, and the *culex* larvæ live in vessels of water, and *anopheles* larvæ in pools. The first thing to do is to search carefully in and around the house for vessels and pools of water; and if there are many mosquitoes in the house, one may be almost sure that their larvæ are somewhere close by. Thus, *culex* swarm in any old tub or pot of water; in broken bottles, old gourds, flower-pots, cisterns, garden fountains, and even in buckets of water kept for cooling soda-water or washing plates; or in those small tins of water placed beneath the feet of tables and meat-safes to keep ants away. They may also swarm in drains and small ditches. To find the larvæ, all that a person has to do is to go and look for them in places like these; he is sure to come across them almost immediately. Little red, worm-like creatures are often found mixed with the mosquito larvæ; these are not mosquito larvæ, but the larvæ of midges.

To find *anopheles* larvæ one must generally go farther afield. Small pools on the ground containing green water-weed, especially rain water puddles by the side of roads and paths, are their favorite haunts; but they may also be found in puddles on the surface of roads, or in hollows in rocks, in old wells, in drains, in small pools and rice fields, or even in "sloppy" ground among grass, or around stables or byres. Stables and servants' godowns are very favorite haunts for adult *anopheles*.

In order to kill mosquitoes wholesale it is necessary only to destroy their larvæ. This is generally a very easy matter, especially in regard to the *culex*. One has only to go around the premises at least once a week and to empty out all pots and vessels containing stagnant water, and also to brush out with a broom all puddles containing larvæ. As the larvæ take about a week to mature, this procedure will generally be enough to keep the insects away, but, at the same time, it is necessary to prevent water collecting anywhere near the house.

If mosquitoes are numerous in a house, they will generally be found to be breeding just outside the windows. Hence, people can generally keep their houses comparatively free of these pests simply by attending to their own premises.

While small collections of water can easily be emptied out or brushed away, it is often more difficult, perhaps sometimes impossible, to deal with the larger collections of water in which mosquitoes, especially the dangerous ones, breed. In such cases the following measures are to be used:—

1. All useless collections of water in which mosquitoes breed should be filled up or drained away, if this can be done at a reasonable cost.

2. If this cannot be done, recourse must be had to the habitual use of culicicides. The simplest culicicide is oil, especially kerosene oil (paraffin). This, if sprinkled on the surface of water, produces a fine film, which destroys the larvæ by choking their air tubes, or perhaps by annulling the surface tension of the water. But the film must spread all over the surface of the water, and must last for at least half an hour. The oil can best be applied by "painting" the pool with a rag fixed on a stick, and first dipped in a pot of oil; in this manner numbers of pools can be dealt with in five minutes at the expense of very little oil.

Whatever fugitive culicicide is used, it must be used at least once a week. Cisterns and wells of drinking water should be kept covered in as much as possible.

It is sometimes impossible to find the breeding pools of *anopheles*, even where the adults are numerous in a house. This is especially the case when there is much rank vegetation round the house. Here much good can be done by simply killing the adult insects as they sleep on the walls during the daytime. Flyflappers should be used; it is dangerous to kill mosquitoes with the hands, because the insects sometimes contain parasites which cause elephantiasis.

W. H. Vickerstaff[9] says that he has examined a large number of tree pines in Jamaica, but so far has been unsuccessful in finding *anopheles* larvæ in them; but in almost every instance, whenever there was any water, even a very small quantity, *culex* larvæ were found in large numbers and of various species. In this district it is believed that the tree-pines are the most common breeding places of *culex*.

C. Fermi[10] has made some experiments in Sassari, in conjunction with Dr. Lumbau and Dr. Cossu-Rocca, with the object of freeing the town from mosquitoes. He was able to discover all their breeding places in different parts of the city, in drains, cisterns, puddles, etc. The method adopted was the destruction of the larvæ by means of petroleum placed in the breeding grounds twice a month. The mosquitoes were destroyed in shops by means of chlorine, and in houses by means of other culicicides, such as a mixture of pyrethrum, chrysanthemum flowers, valerian, and calamus aromaticus, or the "zanoline" of Celli and Casagrandi. The results obtained were so satisfactory that it is concluded from them that it is always possible to free a town from mosquitoes unless the conditions are exceptionally unfavorable—as if it be situated in the midst of a swamp. The expense of freeing a town of 50,000 inhabitants is estimated at $200 to $250 a year. This includes the wages of the staff required to carry out the measures prescribed. The expense is small in comparison with that of other methods, such as smoke cones, which only some 10 per cent. of the people can be got to use.

---

[9] *Brit. Med. Jour.*, June 9, 1900.

[10] *Brit. Med. Jour.*, May 12, 1900.

Woldert[11] notes the finding of *anopheles* in December and January in Washington; in Philadelphia up to the end of October; on the snow in Vermont in February, and at various times during the winter even at the North. There is no need, then, for the mosquito to migrate for long distances. It may persist throughout the year even in high northern latitudes. It has been seen on several occasions and at various places within 500 miles of the North Pole. When mosquitoes are found during the winter they are always encountered not far from standing water and in the neighborhood of an animal. Where the pupæ of the insects occur they may best be destroyed by the use of a solution of tobacco in kerosene oil.

A. Celli[12] remarks that, as is usually the case, rational prophylaxis depends on accurate diagnosis, and in this case what is necessary in order to verify the diagnosis is to examine the blood either in fresh or stained preparations.

Isolation is the first prophylactic measure, and should be taken directly the diagnosis is verified. In a malarious place a person affected by the fever is very dangerous to others, and should therefore be isolated, malaria being a true and proper contagious disease.

Malarial patients can be isolated in any place where there are no malarial mosquitoes.

The best place for isolation would be special sanatoria situated in healthy elevated regions. Inasmuch as the sexual forms of the parasite are the most dangerous sources of contagion, and they, unfortunately, remain for a long time in the blood, the convalescents should not be sent back to the infected places until the absence of the parasitic forms most dangerous socially has been verified by repeated examinations of the blood and perhaps also of the spleen.

Quinine is the specific disinfectant for amœboid organisms, and consequently for the malarial parasites in their amœboid stage. The quinine must be given at once at the beginning of the fever and in large doses, 2 grammes (30 grains), for example; it should be repeated in doses of ½ gramme (7½ grains) for several days, and then at intervals of five, six, or seven days. But even this treatment, if the patient remain in the infected place, does not always prevent recurrences, and an intolerance for a drug which disturbs the stomach and nervous system so much is easily produced.

Patrick Manson[13] states that the reputed prophylactic action of quinine is but a phase of its therapeutic action; it is the application of the drug to the parasite, and not an immunizing of the body against the entrance of the parasite, one has to deal with; therefore one may confidently expect that, if it will cure a malarial infection, it will prevent its development: the development though, not the introduction of the germ. Further, that as some types of the parasite are highly amenable to the drug given therapeutically, similarly its prophylactic power will be greater against such; thus, one may confidently expect it to be a timely prophylactic as against the benign tertian, but less active against the malignant tertian. The value of the drug is apt to be underrated in consequence of it being given in too routine a fashion, and often under conditions in which it cannot be absorbed, as in states of severe gastro-intestinal catarrh. Such failures should be eliminated in assessing its prophylactic value. It is recommended that, in future, experiments in prophylaxis be made with the aid of the microscope, and in reference to the particular type of malarial parasite it is used against, and also that the gastro-intestinal condition of the individual experimented upon be investigated and recorded.

---

[11] *Med. News*, June 9, 1900.

[12] *Brit. Med. Jour.*, February 10, 1900.

[13] *Ibid.*, September 1, 1900.

Pola[14] experimented on 736 soldiers; of 500 who took quinine 18 per cent. were attacked, while of the remainder who did not take quinine 28 per cent. had malarial attacks.

Carre[15] believes quinine diminishes the chance of infection in the simpler forms of fever, but is well-nigh useless in the pernicious forms.

Treatment.—An editorial[16] says that the first systematic attempt on a large scale to grapple with the problem of how best to combat malaria in the light of recent discoveries is about to begin in the Argo Romano, and the following is a translation of the instructions issued by the Bureau of Hygiene of Rome to the medical men who are to engage in this campaign.

In primary malarial infections the administration of quinine in tabloids, each containing ½ gramme (7½ grains) of the sulphate should be recommended during the subsidence or at the end of the febrile attack. The quantity administered should be 2 grammes (30 grains) daily for three successive days and 1 gramme (15 grains) daily for other four days. Tabloids sufficient for a week's treatment are to be given in a small box with appropriate directions to each patient. After the remedy has been suspended for five days it will be well to follow the directions for relapsing cases, even though there be no return of the fever. Hypodermic injections are only to be employed in exceptional cases. The medical officer is recommended to supervise the treatment of primary æstival infections in which the fever of the first attacks should be suppressed as far as possible, experience having proved the importance for prophylaxis of early treatment.

In relapsing malarial fevers the administration of sulphate of quinine should be carried out as follows:—

After the last febrile attack, or during its decline, 2 grammes (30 grains) of the quinine in four tabloids are to be given. The following day the same doses are repeated. During the next five days 1 gramme (15 grains) of sulphate of quinine in two tabloids is administered, after which the treatment is to be suspended for a week. The following week the administration is to be resumed, the patient being supplied with the same quantity of quinine as in the first week, and the quantity taken regulated as before. When the fever no longer returns the daily dose should be reduced by one-half. The administration is then to be again suspended for a week. In the fifth week the same amount is to be given in the same way as in the third week, and so also during the seventh week. As a rule, it is not necessary to continue the administration beyond the seventh week. During the weeks in which the quinine is suspended, the physician may, if he thinks proper, administer "Bacelli's mixture" or capsules and tabloids containing iron.

---

[14] *Phila. Med. Jour.*, Aug. 18, 1900.

[15] *Ibid.*

[16] *Lancet*, July 7, 1900.

The treatment of the fever, whether primary or secondary, should be commenced according to the scheme laid down, even when the last attack has occurred some days previously. Whenever the fever asserts itself it is best to recommence the treatment as for the first day and to continue according to the rules prescribed. The total dose of quinine should be given within two hours, i. e., at intervals of half-hour, three-fourths of an hour, or one hour, according to the fractions. A glass of water should, if possible, be drunk after every tabloid, acidulated, by preference, with lemon or vinegar. In children the doses should be reduced in proportion to age.

Hypodermic injections are reserved for cases of intolerance of quinine by the stomach and for cases of pernicious fever. In these cases two hypodermic injections are made, each of 1 gramme (15 grains) of the bihydrochlorate of quinine dissolved in 5 grammes (1¼ drachms) of distilled and sterilized water. A large syringe is employed, the lateral regions of the abdomen being chosen and the skin washed with gauze and absolute alcohol. The needle should also be sterilized with absolute alcohol or by boiling in a test-tube. The hypodermic solutions in sterilized vials, each containing 1 gramme (15 grains) of bihydrochlorate, will be supplied to the medical officer. The patient must then be conveyed to the temporary hospital or to the city. In the hospital injections of camphorated oil and caffeine will be made. During the two subsequent days 2 grammes (30 grains) of quinine must be given daily either by injection or by the mouth, one tabloid of ½ gramme (7½ grains) every hour. The intravenous injections according to Baccelli's method will be made in extreme cases in the sanitary station hospital. For these injections boiled solutions of neutral hydrochlorate of quinine at a temperature of 40° C. (104° F.) should be employed exclusively in doses of 1 gramme (15 grains) in 10 cubic centimetres (2½ drachms) of chloride of sodium solution (0.75 per cent.).

Robert Koch[17] believes that, in order to master malaria, 1 gramme (15 grains) of quinine should be given to the sufferer from malaria in the afebrile intervals—almost always in the morning hours—until the malarial parasites have disappeared from his blood; then follows an interval of seven days; then again 1 gramme (15 grains) of quinine on each of two successive days; then another seven days' interval; again two days of drugging with quinine, and so on, for at least two months.

W. J. Buchanan [18] says that the Indian gaol experience has settled that it is possible to daily administer preparations of quinine for many months at a time without the slightest mischief resulting. For the past five years quinine or cinchonidine has been personally administered daily to, on the average, over 1,600 prisoners for the four months of the rainy season, and never has a single bad result been met with; even severe cases of quininism are conspicuous only by their rarity. It is needless to say that in spite of Professor Koch's alarmist views on the subject of quinine and hæmoglobinuria, there has not been a single case in personal experience nor has there been found after inquiry such a case since the practice was introduced into the prisons of India.

---

[17] *Deut. med. Woch.*, April 26 and May 3, 1900.

[18] *Brit. Med. Jour.*, Sept. 1, 1900.

Patrick Manson[19] observes that the treatment of malaria resolves itself into one word: the use of quinine. Quinine is a specific, and, if the specific is properly applied, in 99 cases out of 100 the patient can be saved from the effects of the parasite. In cases of violent remittent fever and grave cerebral attacks the patient may be vomiting and unable to absorb the drug, or he may be insensible and unable to swallow it. Then 5 or 10 grains of a soluble salt of quinine must be given hypodermically or rather intramuscularly. Death from tetanus following on the hypodermic injection of quinine is caused by the culpable carelessness of the physician who, in ignorance, of course, has used an injection containing the tetanus bacillus.

A certain number of patients appear to have peculiar sensibilities as regards the action of quinine. In some it gives rise to urticaria, in some to peculiar toxic effects, and therefore to some patients it cannot be given at all. In these cases methylene-blue is of service. Professor Koch is one authority for its use. It is given in doses of from 3 to 5 grains three or four times a day. Another and graver accusation against quinine is that it is apt to give rise to hæmoglobinuria. Professor Koch's utterances in regard to this have been somewhat misunderstood. Many people suppose that Koch said that quinine gave rise to—is the cause of virus, as it were, of—hæmoglobinuria. What he did say was that quinine under certain conditions brought on hæmoglobinuric symptoms, and what he said is, in personal opinion, true. In consequence of what he has said quinine is looked upon with suspicion, if it be not absolutely tabooed, in some tropical countries. This is unfortunate, for, even if quinine is a danger in certain cases, if it does tend to produce hæmoglobinuria in some cases, it is not a one-hundredth part so dangerous in this respect as the malarial parasite.

In cases of black-water fever one should examine the blood, and, if in it is found the fever forms of the malarial parasite, quinine is to be given; if the parasite is not found, quinine is to be withheld.

M. H. Billet,[20] attached to the military hospital at Constantine, Algeria, says that thirteen cases of malarial cachexia more or less pronounced, and consequent upon repeated attacks of intermittent fever of varied type, have been treated with cacodylate of sodium. This drug, following immediately on treatment by quinine, restored the red blood-cells from about 3,500,000 (in cases 2,500,000 per millimetre) to normal, and even above that, viz.: to upward of 5,500,000, in the space of from fifteen to twenty days. The number of injections was from five to six, at intervals of three or four days, the dose employed being 3¾ grains for each injection. In two or three cases 1½-grain doses were used. The hæmoglobin proportion was raised simultaneously with the increase of red blood-corpuscles from between 9 and 11 per cent. to, progressively, 11, 12, 12½, and 13½ per cent.—or almost normal. The weight likewise followed an ascending progression. This treatment following upon quinine is considered as distinctly restorative from the effects of malarial cachexia.

---

[19] *Lancet*, July 21, 1900.

[20] *Jour. Amer. Med. Assoc.*, Aug. 25, 1900.

C. J. Whalen [21] affirms that guaiacol surpasses any remedy so far recommended for malaria. In personal experience it has cured every case, in some of which quinine had been previously tried and failed.

THE LIFE HISTORY OF THE MALARIAL PARASITE.

W. S. Thayer, in a paper read before the County Medical Society, and reported by the *Medical News*, states that the three methods by which the malarial parasite is suspected of being transmitted are by the air, by drinking water, and by the bite of the mosquito. The evidence points strongly to the latter. In the city of Baltimore malaria is not found, and the anopheles is not present. This is the mosquito which is suspected of carrying the parasite. In the suburbs malaria is found and so is the anopheles. In a town of North Carolina which was practically abandoned by white people on account of malaria, many specimens of the anopheles were found, while the culex, a harmless species, was not found. Eight miles distant from this town the culex was found, but not the anopheles, and the region was free from malaria. There is no positive evidence of any other method of transmission. Cases of spring malaria are considered to be relapses. The work to be done now is to determine the habits of the anopheles mosquito, its presence in given localities, its breeding places, and the best methods of extermination.

TREATMENT OF MALARIA IN THE ROMAN CAMPAGNA.

A campaign against malaria in the Agro Romano was undertaken at the beginning of this summer by the bureau of hygiene of Rome. Instructions were issued to the resident physicians and special medical officers were despatched by the bureau to patrol the Campagna, distributing quinine tablets and impressing upon the farm laborers and superintendents the urgent necessity of observing certain simple prophylactic measures. From a translation of the official instructions issued by the bureau (published in *The Lancet* of July 7, 1900) we take the following directions for treatment in developed cases:

"Primary Attacks.—The administration of quinine in tablets, each containing $\frac{1}{2}$ gramme (grain viiss) of the sulphate should be recommended during the subsidence or at the end of the febrile attack. The quantity administered should be 2 grammes daily for three successive days, and 1 gramme daily for other four days. Tabloids sufficient for a week's treatment are to be given in a small box with appropriate directions to each patient. After the remedy has been suspended for five days, it will be well to follow the directions for relapsing cases, even although there be no return of the fever. Hypodermic injections are to be employed only in exceptional cases. The medical officer is recommended to supervise the treatment of primary æstival infections in which the fever of the first attacks should be suppressed as far as possible, experience having proved the importance of prophylaxis of early treatment.

---

[21] *Merck's Archives*, April, 1900.

"Relapsing Fevers.—The administration of sulphate of quinine should be carried out as follows: After the last febrile attack, or during its decline, 2 grammes of the quinine in four tabloids are to be given. The following day, the same doses are repeated. During the next five days 1 gramme of sulphate of quinine in two tabloids is administered, after which the treatment is to be suspended for a week. The following week the administration is to be resumed, the patient being supplied with the same quantity of quinine as in the first week, and the quantity taken regulated as before. When the fever no longer returns, the daily dose should be reduced by one-half. The administration is then to be again suspended for a week. In the fifth week the same amount is to be given in the same way as in the third week, and so also during the seventh week. As a rule, it is not necessary to continue the administration beyond the seventh week. During the weeks in which the quinine is suspended, he may, if he thinks proper, administer 'Bacelli's mixture'[1] or capsules and tabloids containing iron. For convenience of reference the above rules may be stated in the following tabular form:

TABLES FOR THE ADMINISTRATION OF QUININE.

A—In Primary Malarial Fevers.

(Tabloids of 50 cgm.)

	Tabloids.	Total.
First day (near end of febrile attack)	4	2 gm.
Second day	4	2 gm.
Third day	4	2 gm.
Fourth day	2	1 *gm.
Fifth day	2	1 gm.
Sixth day	2	1 gm.
Seventh day	2	1 gm.

"Suspend the administration for five days, then continue as in Table B.

B—In Relapsing Malarial Fevers.

	Tabloids.	Total.
First day (at end of febrile attack)	4	2 gm.
Second day	4	2 gm.
Third day	4	2 gm.
Fourth day	2	1* gm.
Fifth day	2	1 gm.
Sixth day	2	1 gm.
Seventh day	2	1 gm.

Second week.—Suspend quinine; daily observations, etc. (in anæmic persons five tablespoonfuls of "Bacelli's mixture").

Third week.—Repeat treatment as in first week, but if no return of fever reduce dose by one-half.

Fourth week.—Suspend quinine; daily observations (in anæmic cases four tablespoonfuls of "Bacelli's mixture").

Fifth week.—Repeat treatment as in third week, with the same precaution.

---

[1] "Bacelli's mixture" contains the following ingredients: Sulphate of quinine, 3 gm.; tartaric acid, 3 gm.; arseniate of sodium, 5 cgm.; distilled water, 300 gm. The dose for an adult is one tablespoonful.

* If on the fourth day after commencing treatment the fever does not disappear continue with doses of 2 gm. In exceptional cases use hypodermic injections.

Sixth week.—Suspend quinine ; observations (in anæmic cases four tablespoonfuls of "Bacelli's mixture").

Seventh week.—Repeat treatment as in fifth week. End of treatment if no return of fever.

"The treatment of the fever, whether primary or secondary, should be commenced according to the scheme laid down, even when the last attack has occurred some days previously. Whenever the fever asserts itself it is best to recommence the treatment as for the first day and to continue according to the rules prescribed. The total dose of quinine should be given within two hours, *i. e.*, at intervals of half-hour, three-quarters of an hour, or one hour, according to the fractions. A glass of water should, if possible, be drunk after every tabloid, acidulated by preference with lemon or vinegar. In children the doses should be reduced in proportion to age.

"Hypodermic and Intravenous Injections.—Hypodermic injections are reserved for cases of intolerance of quinine by the stomach and for cases of pernicious fever. In these cases two hypodermic injections are made, each of 1 gramme of the bi-hydrochlorate of quinine dissolved in 5 grammes of distilled and sterilized water. A large syringe is employed, the lateral regions of the abdomen being chosen and the skin washed with gauze and absolute alcohol. The needle should also be sterilized with absolute alcohol or by boiling in a test tube. The hypodermic solution in sterilized vials, each containing 1 gramme of bi-hydrochlorate, will be supplied to the medical officer. The patient must then be conveyed to the temporary hospital or to the city. In the hospital injections of camphorated oil and caffeine will be made. During the two subsequent days 2 grammes of quinine must be given daily either by injection or by the mouth (one tabloid of ½ gramme every hour). The intravenous injections according to Bacelli's method will be made in extreme cases in the sanitary station hospital. For these injections boiled solutions of neutral hydrochlorate of quinine at a temperature of 40° C. should be employed exclusively in doses of 1 gramme in 10 c.c. of chloride of sodium solution (0.75 per cent.)"—*Medical Record.*

THE ETIOLOGY OF MALARIA.

From all accounts of the work done in the study of the etiology of malaria in the past two years, we have reason to expect to see the dictum set up that the mosquito is the only agent in the transmission of malaria. At the recent meeting of the American Medical Association, all the papers in the symposium took cognizance of this, and four of the six dealt directly with the subject. All of these had done some work in this field and all were ready to admit that this "ultra" inference was the most rational one and most in keeping with observed facts in malarial sections. Some years ago a paper appeared in the *Monthly* by Dr. Battle, of Riverside, Ark., describing a "non-malarial refrigerating ventilator." He stated that the only time they had malaria in the house since the erection of this ventilator was after his wife had closed the screens for some reason, and she was attacked with a fever from which she died. Other members of the family were also taken sick at the time. This experience explains more forcibly than any experiment made, because it was made without reference to the mosquito, and hence without bias. Mosquitoes do not rise very high above ground, except in the neighborhood of trees, where they may move up by degrees and where they are sheltered from the sun. They correspond in every behavior to the miasm of malaria, i. e., do not travel against the wind, do not rise to high altitudes except along gentle slopes, are abundant in season of miasm, are cleared away by rain, and swarm principally at night; at any rate they shun daylight. Two physicians in a town we recently visited had opposite views regarding the transmission of malaria; the one drank only boiled, filtered and iced tank water, used no netting, and had one or more members of his family in bed all summer; the other drank "pump" water and used screens; no fevers occurred in this house.

The early spring malarias are relapses from the previous season; the cases of "ice cream," "watermelon," "puerperal" and "surgical" malaria are simply precipitations of a paroxysm in cases of latent infection. Some of the "pump water" malarias seen by the writer at St. Joseph's Hospital this year were intestinal infections yielding to appropriate treatment for bowel trouble, and no further paroxysms developed though no quinine was given.

The German East African Malaria Commission, as also the Italian writers, consider the matter settled and not open to further discussion. Since the malarial organisms have no mechanism for penetrating vessel walls, and the drinking of dew, ditch and marsh water has in all experiments failed to produce in infection, whereas the injection of malarial blood will induce an attack of the disease, and the malarial plasmodium has been found to undergo changes in the anopheles or malarial mosquito, and subsequent exposure to such mosquitoes under conditions which excluded all possible outside infection produced malarial attacks, we are forced to the conclusion that this is the sole and only mode of transmission.

This opens up an immense vista of possibilities in the management of malaria. It also imposes a new responsibility upon the practitioners in malarial regions, for, since every case of malarial fever is a possible source of infection for others, means should be adopted to prevent mosquitoes feasting on an infected individual from inoculating another patient. This is not a fanciful sketch, as the following case will illustrate: A little girl in a certain Memphis family was taken ill with tertian malaria; the attending physician brought us some of the blood. Twelve days after (seven days for the development in the mosquito and five days for period of incubation) the father had a chill; fourteen days later the sister had a paroxysm. Presumably she occupied the room only after the illness of the father, but the attendant is now out of the city and we could not verify this point.

It also becomes our duty to thoroughly cure our patients and call their attention to the fact that this is to prevent the spread of the disease. The flushing of small bodies of water in which the larvæ of the anopheles are found has also been suggested as a means of preventing malaria. It is strange that the Memphis city health authorities, whose duty it is to prevent the development of diseases, should have thrown a dam across a branch of the bayou just north of St. Joseph's Hospital, making an ideal spot for the development of *anopheles*. We have been getting our supply there for some weeks.

The practitioners in the great Mississippi Valley should not be the last to take cognizance of the newer study of the etiology of malaria. The profession elsewhere looks to us for light on many questions of this kind, and it behooves us to be up to date.—*Memphis Medical Monthly*.

PREVENTION OF MALARIAL FEVER.

The Liverpool School of Tropical Medicine has just issued a small booklet consisting of instructions to dwellers in malarial countries, which should be of particular interest to Americans, both at home and in their new colonial possessions.

The nature of the disease is first touched upon. Malarial fever or ague is caused by certain minute parasites which obtain access to the corpuscles of the blood, which latter acts as their hosts. The paroxysms of the disease are due to sudden liberation of spores into the blood fluid. As soon as these spores enter new blood corpuscles, fever ceases and sweating occurs. After a number of attacks a sort of tolerance occurs, but relapses, either spontaneous or due to renewed exposure, are prone to develop, perhaps years after the original infection. Quinia acts as a true bactericide in malaria.

The malarial parasites enter the human blood through the agency of certain species of mosquito. The insect becomes infected from sucking the blood of malarial patients, and the parasites spore within the insects' bodies. The salivary secretion of the mosquito is loaded with spores, and as this secretion is injected into the tissues before the blood is sucked out, inoculation readily occurs. The truth of these statements has been demonstrated with mathematical certainty, both in Italy and India. All *original infection* must have occurred in this manner. Relapses may be due entirely to persistence of the parasites within the blood cells.

The mosquitoes instrumental in this propagation of disease are of a single family—the *anapheles*—which breed in marshes and stagnant water in general, which accounts for the association of malaria with undrained and swampy lands. They may be distinguished from the culex or ordinary harmless mosquito by the peculiar attitude when at rest, the body being pointed at an almost right angle to the wall, etc. The larvæ of the two species, which live on the water, are also readily distinguished; that of the anapheles floats and wriggles backward when disturbed, while the culex larva wriggles to the bottom of the water.

To prevent malaria, then, we must avoid being stung by mosquitoes and must also seek to destroy the larvæ and mature insects. Nettings should be used on beds, both at night and during naps in the daytime. There is room to exercise the greatest care in these matters, and by making a conscientious study of the subject of canopies the mosquitoes can be practically kept away. Punk sticks may be used during the daytime. Flannel socks should be worn to protect the ankles, as the insects readily sting through cotton wear. As mosquitoes may live for months and can hibernate, certain houses and localities abound in old, infected insects. When a person becomes infected he must remember that he is a menace to the community if bitten by mosquitoes, and he must use the same care as uninfected persons in protecting himself.

To destroy mosquitoes and larvæ outright we must remember that the anapheles frequent natural pools rather than artificial collections of water. A search for larvæ should be made and all ditches, drains, puddles left by showers, etc., should be filled up or drained or otherwise destroyed, with the use of kerosene temporarily or when the collection of water cannot be done away with. Fresh tar and quicklime are also efficacious. Adult insects should always be killed on the walls with flyflappers. Houses should be built on high and sloping grounds to avoid stagnant water. Ships in port should be quarantined against the *anapheles.—Medical Review of Reviews.*

THE TREATMENT OF MALARIAL DISEASE.—Dr. J. T. Wilson (*Virginia Medical Semi-Monthly*, August 24) says that small doses of calomel and colocynth should be given as a preliminary purge. He also uses alkalines in the first stages, viz.: the acetate, citrate and bicarbonate of potassium. When the fever has been broken up a good tonic should be given. The author has had good results from the following:

℞	Sulphate of quinine	1½ gr.
	Sulphate of strychnine	1-30 gr.
	Dried sulphate of iron	1 gr.
	Arsenious acid	1-20 gr.
	Powdered rhubarb	½ gr.

M.—Make one capsule.
Sig.—Take one three times daily after each meal.

MALARIA AND THE MOSQUITO.

The connection between mosquitoes and the prevalence of malarial fever has been definitely worked out by Ross, Manson and others, but the practical value of this demonstration remains to be worked out by the everyday practitioner.

The common, ordinary kind of mosquitoes do not produce, or serve as carriers of, malaria.

Gerald McCarthy, in the Bulletin of the North Carolina Board of Health, tells us, in a very interesting paper, some facts in regard to the life history of the malarial parasite.

The genus *culex* is the ordinary mosquito that keeps us awake these warm nights, but his cousin the *anopheles* gives us chills and fever at a moment's notice.

They differ especially in the way they bite; the *culex* takes his nourishment on a dead level, while the *anopheles* stands on his head, or her head perhaps, in order to get his bill down to a better depth.

Mr. McCarthy says that the parasites of human malaria exist in the blood stream at first in the form of amœboid, motile jelly dots. They grow fast and usually in from one to three days attain full size. They then pass into the spore form as sporocytes and gametocytes. The sportocyte is the asexual form. It at once begins to form a sort of capsule in which appear asexual spores. These spores, according to the species, mature in from one to three days. The capsules then burst, the spores fall into the serum and soon after assume the amœboid form. They move about in the blood serum until they find a red corpuscle to attack. The bursting of the spore sacks and the storming of the blood corpuscles by the new generation of protozoans is correlated to the period of recurrence of the fever, and is the cause of the same.

The gametocytes are the sexual form. They do not undergo any further change in the human body except as they may degenerate and die. They may, in this way, circulate in the blood stream for days and weeks. If a mosquito of the genus *anopheles* sucks the blood of a person in whose blood stream the gametocytes are circulating, the cysts as soon as they reach the fore crop of the insect burst. The microbe resumes the cycle of its development. Some of the cysts produce male, some female germs. These coalesce, and the result is a new individual or zygote. These grow rapidly, are very active and repel the attacks of the phagocytes of the human blood in which they were borne into the alimentary tract of the insect. The zygotes soon bore through the stomach walls of the mosquito and fix themselves upon the external surface in the form of oval cells of from 8 to 10 micromillimeters in diameter. These cells subdivide much like the egg of a vertebrate, and eventually form a capsule full of small spores—each capsule, when mature, is 60 micromillimeters to 80 micromillimeters in diameter, and may contain several thousand spores.

The whole process from the time the gametocyte enters the body of the insect until the spores are formed is about ten to twelve days in summer. It is longer in cooler weather. These sexual spores are motile and move about until they reach the blood stream of the insect.

In this they are carried into the salivary glands. When such a mosquito bites a person she injects into the wound some of the saliva and with it the spores of the protozoan. These once in the human blood stream assume the amœboid form from which we started, and so begins a new cycle.

It may be asked what becomes of gametocytes which do not find their way into the body of an *anopheles*. They eventually degenerate and are eaten by the phagocytes. The same fate, sooner or later, overtakes the sporophytes in the human blood. If, instead of *anopheles*, it is *culex*, which receives the gametocytes, so far as we know, the latter do not develop further, but are digested with the blood in which they are imbedded.

Now a few words as to the classification of the protozoan parasite. The latest authors make two genera:

I. *Hæmamœbidæ.*

II. *Hæmomenas.*

The first genus contains four species. Two of these produce malaria in birds, the other two in man.

Hæmamœba malariæ causes quartan fever.

Hæmamœba vivax causes tertian fever.

Hæmomenas has but one species.

H. præcox (Laverania malariæ of older authors).

It causes pernicious autumn malaria in man.

The life histories above outlined are not based upon theory, but upon microscopic dissections. They are as true as anything can be in science.

He says that drinking water has no part in the etiology of malaria, and that the tearing up of surface soil in hot weather does not produce malaria.

To the statement that malaria can not be caused by impure water, Dr. Lewis, the Secretary of the Board of Health, takes exception. The fact that impure water may cause malaria has been proved by experience, which knocks out any amount of theory in the first round. But the mosquito should bear an important part of the blame and our efforts should be towards a practical application of this truth.

As a topical application to prevent mosquitoes from biting, nothing equals kerosene or coal oil, in our experience. To suspend a small flannel rag, wet in kerosene, at the open window or door will keep them out of the room. Rub some over the hands and arms, and lightly through the hair, and it will compel a roomful of mosquitoes to stand back.—*Charlotte Medical Journal.*

BERBERIN IN MALARIAL SWELLING OF THE SPLEEN.

Typaldo Lascarato (*Grèce médicale; Indépendenc médicale*) says that berberin, in addition to its bitter tonic action, has the faculty of causing the elastic fibers of the spleen to contract, especially when that organ is enlarged, in a manner similar to that of ergotin on the muscular fibers of the uterus. This is not entirely free from danger as, if it is not administered with caution, its action may be so severe as to rupture the swollen spleen and cause fatal hemorrhage. But berberin, by rapidly and abruptly contracting the parenchyma of the spleen, drives from it *en masse* the paludal parasites which swarm in it, toward the general circulation, from which arises a fresh access of pyrexia. The administration has often been known to be followed by a brusque elevation of temperature. Many physicians have on this account considered berberin more harmful than useful. However, the author points out that this action of berberin in driving the parasites from the spleen, which is their place of election, into the general circulation is very favorable to the complete destruction and disappearance of the paludal miasm from the entire organism. The parasites expelled from the parenchyma of the spleen are spread through the general circulation at a very inopportune period of their evolution, when they engage in a deadly struggle with the phagocytes of the blood, to which they easily succumb. To aid this result, the Italian physicians, who have had considerable experience with this remedy, advise its use almost simultaneously with quinin, which attacks them more rapidly in the blood driven out by the berberin from the spleen. In all cases of swollen spleen, therefore, save those of too old standing or the ultimate result of advanced hypertrophy or degeneration of the organ, berberin is highly commended by the author. It is given in a daily quantity of from 1½ to 15 grains, according to the age of the patient, and always in combination with quinin. A favorite Italian prescription is as follows:

℞. Hydrochlorid of berberin.............................gr. xv
Bisulphate of quinin.................................gr. viiss
M. Sig. To be divided in four powders and one taken every half hour or hour, for an adult.—*N. Y. Med. Jour.*

THE THERAPEUTIC VALUE OF UROTROPIN.

By DR. EMIL SUPPAN, of Vienna.

(Abstracted from the *Wiener medizinsche Blätter*, No. 28, July 12, 1900.)

Since the time that Nicolaier first introduced Urotropin for the treatment of bacterial disease of the urinary tract and the uric acid diathesis, numerous reports have been made fully confirming the therapeutic value of the remedy. Entirely apart from its effect upon the uric acid diathesis, it is indubitably to Nicolaier that we are indebted for the possession of a remedy for a whole series of severe and even as a rule incurable affections of the urinary passages. It is of immeasurable value in practice to possess an agent for the relief of those severe forms of cystitis occurring in old men due to prostatic hypertrophy, and leading as a rule to chronic pyelitis or pyelo nephritis and all the symptoms of chronic urinary intoxication. They are justly feared by the practitioner. Urotropin is so far the only remedy that we possess by means of which vesical catarrh and its complications can be treated internally. It is of the very greatest value as an aid to the local treatment, and in many cases can replace it entirely.

The physician treating severe cases of urosepsis will be quite familiar with the difficulty of deciding upon the management of these cases of cystopyelitis in old and often greatly debilitated, even marantic men. Is lavage of the bladder to be undertaken or not? To him Urotropin will be extremely welcome and very useful. The malady is frequently fatal, and the use of the catheter only postpones its termination. Often there is absolutely no better method of handling these cases than to administer quinin to combat the fever, give Urotropin for the urinary poisoning, and watch the case for a day or two. It was our former custom to catheterize at once, and wash out the bladder once, twice, or oftener daily; or in hopeless cases to institute permanent drainage of the bladder. In spite of this the mortality from uræmia, anuria, and hæmorrhage was very great. We can certainly spare the patient pain and discomfort, and perhaps help and save him by avoiding catheterization and employing Urotropin. In these severe cases instrumentation should only be used from time to time for the evacuation of the bladder when the patient cannot do so spontaneously.

If the Urotropin is effective, and the patient survives, vesical lavage may be undertaken in a certain proportion of these cases in two or three days, the drug being meanwhile continued; thus instituting a combined local and general antibacterial treatment. And we should never neglect to administer Urotropin where absolute retention necessitates the use of the catheter, or where lavage is indicated and is not too risky. Hence we may lay down the rule:

Urotropin must always be employed in every case of urosepsis of the aged with prostatic hypertrophy, in all the non-acute and septic bladder and pelvic catarrhs which are the consequences and complications of this growth, as also in inflammatory conditions dependent upon atrophy of the prostate, neoplasms and diverticulæ of the bladder, and stricture. Omission to do so is a serious dereliction from duty, since by its means the fatal termination may be averted in many otherwise hopeless cases; and in others its continuous administration may so influence threatening symptoms that the patient may live even as long as twenty years thereafter without serious disturbance of his health. There is no possible doubt that Urotropin is of inestimable value in the treatment of urinary poisoning in the aged. It is true that a certain number of these cases, even most hopeless ones, do improve spontaneously; but the percentage is small. It is indubitable also that some of them, more especially those seen late in the disease or in extremis, do go down hill in spite of the immediate administration of Urotropin in proper doses, and in spite of all other antipyretic and strengthening measures. But in a very large proportion of the cases Urotroin has an undoubted and decisive effect. Hence the injunction to begin the administration of the drug at once, and continue its emloyment for a long time, in every case of urinary fever in consequence of cystitis.

I have treated a very large number of prostatic hypertrophies during the last three years. Whenever a complicating cystitis of any severity appeared and whenever the symptoms of an ascending process or a beginning acute or subacute septic cystopyelonephritis showed themselves, I have never omitted to administer Urotropin at once in large doses. My favorable opinion of the drug is based on the very satisfactory therapeutic results that I have attained. It has done me brilliant service in some, and these not a small proportion of the cases; and I believe that I must ascribe the avoidance of a rapidly lethal termination in more than one extremely critical case at least chiefly to the drug. Absolute proof of this, of course, is wanting. I do not propose to institute any control experiments, and let any case of mine with urinary poisoning go without the drug. The interests of the patient imperatively demand its immediate use.

To give a single example, let me mention a case that I treated some eight months ago. A very marantic patient, aged 72 years, had had for the last fifteen years frequent, almost hourly urination, especially at night. His color was faded, he was much emaciated, and there was no appetite. His prostate was very large, especially the median lobe, which projected into the bladder; and there were deep recesses behind and at the sides of this protuberance in which the urine was constantly stagnant and undergoing decomposition. The bladder was hypertrophied and trabecular, and was never completely emptied, the residual urine being about 400 ccm. (13 ounces). The urine was purulent, and often stinking, and contained masses of mucus and pus. His fever frequently reached 39° C. (102.2° F.), and he was often kept to his bed with chills and diarrhœas. He had been having vesical irrigations for three weeks without the slightest effect. These I ordered to be stopped, after informing his relatives of the gravity of the outlook. I gave him 2 grams (30 grains) of Urotropin in ½ gram (7½ grains) portions every four hours dissolved in half a glass of soda water. Even in four days there was a slight improvement in the urine; there was less clotted mucus and pus, and the repulsive ammoniacal odor had diminished. The fever, general malaise, and prostration gradually disappeared. On the eighth day the patient was able to leave his bed, and the administration of nourishment, which had sunk to nothing, was in full swing again. Cautious lavage of the bladder with boric acid, and permanganate of potash with nitrate of silver could then begin. The Urotropin was continued in doses of 1.5 grams (22½ grains) daily. In the morning the bladder was thoroughly washed out with a large quantity of fluid; in the evening the patient removed the residual urine with a Nélaton catheter himself. Improvement was continuous for several weeks. But as soon as the patient stopped the Urotropin for several days the urine became worse; so that I directed him to take the drug for four days in each week. Thanks to the continued employment of the drug, and the careful nursing that he had, the patient was finally put in a very fair condition, though of course there was no question of curing his old vesical malady. About twenty other cases of septic cystitis and pyelitis in the aged ran a similar course under the same treatment.

I also treated seventeen cases of cystitis (ages ranging from 18 to 41 years), with Urotropin. They were usually gonorrhœal or a pure bacteriuria. In these milder cases I at first employed the Urotropin in doses of 0.5 gram (7½ grains) three or four times daily in half a glass of soda water only after the other remedies, salol or benzoate of soda internally or lavage after Didet and Janet, had failed me; later on I used it in the beginning to support the local treatment of the bladder, urethra, or prostate. Like many others, I found that local treatment was often useless, and in twelve cases I had to stop it and rely upon the Urotropin alone. In the great majority of cases I had most excellent results. In some the urine became clear with surprising rapidity. In isolated cases there was no result, in spite of the use of the remedy for months; and I may call attention here to the fact that in very old and obstinate cases of bacteriuria or cystitis the dosage must be correspondingly large. Casper has remarked the fact that the result frequently depends upon the correctness of our judgment in this respect. I have gotten results in some cases with 3 grams (45 grains) where 1.5 and 2 grams (22½ to 30 grains) were without effect. In every case, however, the patient's appetite was markedly increased; and the patient suffering from occasional chills, vomiting, and general disturbance lost these symptoms entirely.

The reason why Urotropin is inefficacious or why its effect becomes less after a time in certain cases has been explained by Casper and various other investigators. They found that in certain cases the Urotropin passed into the urine unchanged, and no formaldehyde could be demonstrated in the secretion. The action of the drug, according to Casper, depends upon the presence of free formaldehyde in the urine;

the more there is of it, the more of the noxious micro-organisms are destroyed. Only a portion of the Urotropin is split up; and severe cases of cystitis require large doses to get its effects.

There were no unpleasant by-effects in the vast majority of the cases to which I administered Urotropin. Some patients seem to have a certain idiosyncrasy for the drug, and had some headache or ringing of the ears. But these effects usually diminished when the drug was persisted in.

The diminution of the suppuration in the severe cystites of the aged cannot be effected with any other method of internal or local treatment as it can by the use of Urotropin; no other remedy has the same bactericide and suppuration lessening effect. It will not do, however, to reject lavage, and rely upon Urotropin alone in every case. As many observers, and amongst them Nicolaier, Casper, Kelly, Smith, Brewer, Belch, and Whittaker, have remarked, Urotropin is an excellent aid to lavage, in cystitic processes, and is especially valuable and quite indispensable in prostatic hypertrophy with chronic retention and cystitis and pyelitis. In such cases the drug markedly improves the severest symptoms; cure, of course, cannot be hoped for.

I have seen an astonishingly rapid and permanent effect from the drug in seven cases of phosphaturia of the obstinate form which appears after long continued gonorrhœa, and in which no other therapeutic measure effected the slightest improvement. Under the use of 1 to 2 grams (15 to 30 grains) of Urotropin daily the milky urine cleared up, and the sediment of amorphous phosphates and phosphate of magnesia disappeared in a few days. There was prompt improvement also in the frequent urination, the urethral burning, the twitches and pains in the legs and loins, and the other numerous neurasthenic symptoms with which these patients were affected. Of course some cases of severe phosphaturia progressed more slowly; but marked improvement was always manifested.

Urotropin is thus a very efficient remedy for the treatment of diseases of the urinary passages, being invaluable in certain forms; and there is no other drug in our armamentarium which will take its place.

CASE OF ULCERATIVE COLITIS.

By T. J. BIGGS, M.D., Stamford, Conn.

George H———, age 32, American. Diagnosis: Ulcerative Colitis.

The patient was admitted to the hospital May 2, 1899; had been a sufferer for some three months, and during that time was under the care of a rectal specialist in New York, but in spite of this he got no better and the condition steadily grew worse. He said that at the time of the beginning of the condition, it commenced with a slight diarrhœa, loss of appetite, nausea, and a slight continuous fever. At the end of a week, he began to have considerable pain on pressure along the transverse and descending colon, also tormina about the umbilicus, burning pain in the rectum with the sensation of the presence of a foreign body, and a constant tenesmus. He said the stools for the first few days contained more or less fæcal matter, but they soon changed to greenish, tough, transparent mucus, containing some blood and pus. During the tormina, nausea and vomiting were present; the urine was scanty and highly colored; and the number of stools ranged from 5 to 20 in the 24 hours. At the end of a week he said he was so weak that he could not leave his bed.

On entering the hospital, he was greatly emaciated, and so weak that he had to be carried from the ambulance to his bed. Examination shortly after his entrance showed the presence of a mild general peritonitis which was chronic in form. He had been living on peptonized milk and various other prepared foods, but was able to retain but very little of it, and what he did retain distressed him greatly and gave him but feeble nourishment. His temperature was 101.5, pulse 122; microscopic examination of the blood showed only 150,000,000 red cells to the cubic millimetre, with a greatly decreased quantity of hæmaglobin and an increase in the white cells.

The patient was put on bovinine, half a teaspoonful in lime water every hour. Also a rectal injection of bovinine, one ounce once in 24 hours, the object of this high injection being two-fold: First, to bring about a reparative process of the mucous membrane of the bowel, and to render the lower part of the tract aseptic. He began to improve almost from the first. This treatment was continued up to May 7th, when the quantity of bovinine was increased to two teaspoonfuls every hour, in sterilized milk and lime water. The rectal injections were given once in 48 hours, and two ounces employed instead of one.

May 12th, the bovinine was increased to a teaspoonful every two hours, and the rectal injections reduced to an ounce again and employed every third day. At this time he was free from pain; the peritonitis had subsided, temperature was normal, pulse 99, evacuations were about three to four in 24 hours, not painful, containing no blood or pus but some mucus. He had a desire for food, and when allowed some light and easily digested diet, retained it without any inconvenience, and seemed to relish it.

On the 20th, the bovinine was increased to a wine-glassful every two hours, and rectal injections of bovinine pure were employed once in 24 hours.

On the 25th he was up and about, feeling, as he expressed it, "first rate;" had gained some nine pounds in weight, color was good, pulse and temperature normal, defecations two in 24 hours, no pain, slight trace of mucus. He was allowed a light general diet, and the bovinine continued as before.

On June 1st he was discharged, cured.

This case I deem of especial interest, for it was a well defined case of ulcerative colitis in an advanced stage, and had resisted the most approved methods of treatment. Under the blood treatment, it began to improve from the very first, and went on to an absolute cure without a single interruption.

It gives me great pleasure to highly commend this most valuable preparation in the treatment of all these chronic bowel conditions. I have seen old rectal ulcers that had resisted all treatment heal rapidly and within a comparative short space of time. Another thing of great interest is that the mucous membrane, when treated with bovinine, seems to be absolutely restored to normal, leaving not the semblance of a cicatrix. There is no danger of a ptomaine poisoning from the bovinine, as it is an absolutely sterile preparation, the nutritive principles being rapidly absorbed, so that within an hour after their application nothing is left at the site of the application but the antiseptic principles and immediate topical nutritive effect of the preparation.

TREATMENT OF MIGRAINE.

Dr. Henry Hanford, in an article on migraine and the vasomotor theory, speaks of the treatment as follows:

It is well known that when with headache the extremities are cold, some relief is obtained by warming the feet and hands at the fire. In many cases the recumbent position is required in addition. In a large class of patients the attack may be cut short by many hours by going to bed, applying hot bottles to the extremities, and taking a hot drink, as soon as the stomach will retain it—some hot tea or milk. A glow soon pervades the surface, and the spleen is relaxed. Relief so obtained is not very liable to relapse. After a few hours the ordinary duties of life may be resumed and, although sleep is best completion of the cure, its place may sometimes be taken by a good dinner. I believe this treatment, when it can be carried out, to be far superior to any drug treatment, although it may be aided by a good dose—30 to 60 grains—of potassium bromid. It is a curious fact, and may be taken as the exception which proves the rule, that a few patients find that the recumbent position aggravates their pains and often prefer to spend the night in an armchair rather than go to bed. And also, in the last stages, moving about sometimes seems to hasten the end of the attack more than remaining quiescent.—*Edinburgh Medical Journal.*

QUININ SULPHATE IN COMPLETE ABORTION.

Schwab (*Rev. Med. Chir. des Mal. des Femmes*) points out that obstetricians are not agreed as to the best treatment of incomplete abortion, some leaving matters alone unless hemorrhage or sepsis appears, others proceeding at once to the clearing out of the uterus with finger or curette. He is of the opinion that save in cases in which the medical men can keep the patient under constant supervision, in which antiseptic precautions have been carried out since the commencement of the abortion, and in which the os is still closed, the uterus ought to be emptied at once. He admits, however, that the curette has its dangers, and that ergot is inconvenient, so he recommends quinin sulphate. He has used it with success in seven cases of incomplete abortion. It is quite safe; it does not set up a tetanic condition of the uterine muscle; it may be given in two doses of 8 grains at an interval of ten minutes, and it usually causes emptying of the uterus in about four and a half hours.—*The Times Register.*

ADDRESS TO STUDENTS.

It is once more our pleasant office to welcome those who are entering on their medical studies and to congratulate them on their choice of a profession which by common consent ranks among the noblest and most useful. We have done this for many years, and in doing so it has been our duty more than once to point out that the medical life has its disappointing side, which must be weighed against its splendid opportunities for good work. There are times when this black side seems persistently turned toward the medical profession and the aspirants to our ranks, but none the less our implicit belief is that the life of the good medical man is a life the usefulness of which to his generation is unparalleled and the sweets of which have a rare savor of their own. No easy task lies before the student. At least five years must be passed in hard study before the diploma or degree which gives him legal authorization to practice can be obtained, and even when he reaches the goal he must still look forward to hard work, long hours, and as a rule very insufficient remuneration. On the other hand, the scientific subjects which engage his study are of fascinating interest, while as long as a medical man lives he remains a student to be fascinated, and his faculties will find ample satisfaction in the relief of suffering, the improvement of the public health, and the exercise of unlimited opportunities for unostentatious benevolence.

Of the hundreds of students who will joint the medical schools in October next, full of hope and ambition, only a certain number will reach the threshold of the promised land, and it is well to consider the usual causes of this falling out by the way. Ill health accounts for many students never attaining to a place on the medical register; distaste for work for not a few failures; and exhaustion of pecuniary means for others. The wastage from breakdown of health is so serious that we would impress upon those who intend to enter the profession, and upon their relatives, the importance of considering carefully beforehand whether the student is strong enough to endure the strain of long and laborious study; for the course of study taken even by the man who will be content with the most easily obtained diplomas is long and trying. The first three years will be mainly occupied by a course of scientific training. The subjects of chemistry, anatomy, physiology, pathology, and bacteriology which will engross his attention during this time are of the utmost importance as the only sure foundation for his future clinical work. More than this, the study of them trains the student in scientific methods of thought, and accustoms him to receive nothing as certainly true until it has been thoroughly tested. There is always a temptation to the student to become restless during this early stage. It is difficult for him to believe that these fundamental studies are essential to his later comprehension of purely medical subjects, and there is a tendency for him either to trifle with his work and get into desultory habits, or, what is nearly as bad for him, to neglect the topic in hand and to dabble in pursuits which will engage his attention later. There is also a much finer temptation which may speak in the highest terms for the student's individuality. One or other of the sciences ancillary to medicine may become so absorbing to him that he is diverted from the main object of his career and chooses to become a physicist or a chemist rather than a medical man. We have only one word of caution for such a student: Be sure of the reality of the call to pure science before adopting it. The chemist, the physicist, the minute anatomist, and the physiologist, whether general in their work or applying it specially to bacteriology, have all their integral part to play in the advancement of medicine. But unless their learning is of a high order they find it difficult to turn it to much worldly advantage. Before a student who has commenced his studies with the idea of entering the medical profession decides to adopt the life of the man of pure science he should take advice from his elders. And short of a student obeying what he believes and his friends believe to be a real bent for one of the ancillary sciences, he should begin as he means to go on. The lazy first-year's man tends to be an idle fourth-year's man; and the man who dabbles in medicine and surgery when he should be mastering anatomy and physiology is apt to be an ill-equipped and dilettante student when he is preparing for his final examinations.

The list of subjects to be mastered is now so long that it is only by concentration of attention to the business in hand that adequate proficiency can be gained. In fact, when the beginner sees the schedule of knowledge with which his examiners will expect him to be acquainted, he may at first be inclined to envy his predecessor of fifty or seventy-five years ago when the microscope was little used and subjects such as bacteriology were not yet dreamed of. In those days, except for university degrees and for the membership of the Royal College of Physicians of London, the preliminary education of the student in general subjects was ignored. After an apprenticeship during which he might be taught little more than bleeding, bandaging, and the compounding of drugs, he proceeded to "walk the hospitals," and, if he would, to attend courses of lectures; and at the end of his course he had to face only a single examination, often of a perfunctory character. The better men, no doubt, worked loyally and thoroughly, but the mass of students led a rather idle life to the detriment of their future capacity for doing their duties and to the discredit of their class. There were great men among the leaders of medicine half a century ago, and they had in many schools a fine following, but the most ardent admirer of the bygone days can hardly wish to return to the system of medical education prevailing, say, at the accession of Her Majesty to the throne. The student of today has a very different career. He has a very large—perhaps too large—number of subjects to study, and his proficiency is rigidly tested by a series of examinations before he can obtain any legal qualification to practice. On the other hand, his advantages for study more than compensate him for the severer course. His arduous work equips him more fully for practice, and it is no disadvantage for young men to have their time well occupied. Medical schools are generally situated in large cities where the employment for idle hands that is proverbially supplied by a hard master is full and varied. And with regard to the aids at his disposal the modern student is incomparably better off than his predecessor. There is an abundance of excellent well-illustrated text-books; regular courses of lectures are conscientiously given by competent men; and the opportunities for practical work in well-lighted dissecting rooms and expensively equipped laboratories, as well as for clinical work in the hospital wards and out-patient rooms, are as good as they well can be.

The course which each man should pursue will be marked out for him by his teachers. But one or two hints may be given. There is a delusion among students that the acquisition of book knowledge which will enable them to shine in passing their examinations brilliantly is the chief object at which they have to aim. Text-books must be mastered, it is true, and examinations have to be passed, but for actual practice there are qualities even more essential than academic distinction. Unless during his student days a man has acquired not only knowledge but judgment, tact, and knowledge of men, he is but poorly armed for the fray. "The greatest clerks are not the wisest men." It is not uncommon to see men, who have made examinations rather than high professional capacity their aim, take a brilliant degree, only, when suddenly brought face to face with a world which they have ignored for years, to be outstripped in the race for professional success by others whose academic distinctions were moderate, but who had acquired more thorough practical knowledge. We are not decrying academic distinctions. But unless knowledge is supplemented by judgment it is of little use. As William Penn wrote two centuries ago, "He that hath more knowledge than judgment is made for another man's use more than his own . . . There are some men like dictionaries; to be looked into upon occasions, but have no connection, and are little entertaining . . . A wise man makes what he learns his own, t'other shows he's but a copy or a collection at most." The snare for an enthusiastic student is a preconceived idea that the more he learns and reads the greater will be his stock of useful knowledge at the end of his course. This idea requires to be qualified. His mental food must not only be swallowed but digested and assimilated, and for the pabulum supplied by his teachers and his books to be of use to him for practical purposes more than mere ingestion is necessary. The acquisition of facts without a realization of their bearing is a feat of memory, but not necessarily a high intellectual performance. In one of our asylums for idiots there was some years ago a man who knew by heart the whole of Gibbons's "Decline and Fall of the Roman Empire." If any sentence were read to him he could tell the next, but he was quite unable to give any intelligent idea of the meaning of what he glibly recited, or to show its connection with other parts of the book. What the student has to aim at is thoroughly to understand the meaning of whatever he learns, and the relation of his newly-acquired knowledge to what has gone before. Both of these are essential, and in scientific matters can rarely be learned from books alone. Oral teaching, as in a good course of lectures or demonstrations, is of the greatest assistance, but cannot replace the practical testing by the student for himself of what he has been taught. For instance, let us take the study of anatomy. There are admirable text-books from which a man gifted with a good memory may learn accurately an enormous number of facts. From demonstrations on parts already dissected he may get highly technical knowledge, and if the relations of the various parts to one another are pointed out he can learn far more than books alone would teach him, and even be able to answer a stringent examination paper on the subject. But he will not make a good anatomist, and if his methods of study stop here he will not later make a good surgeon. He must be assiduous, by his own dissections, in proving to himself at first hand the truth of what he has read and heard, and so made the knowledge his own. Theoretical and practical work must supplement one another, and the student must continually endeavor to find out the bearing which new facts have on those already acquired. We have given this warning because it is not infrequent to find men who begin with much promise, full of enthusiasm, regular in attendance at classes, indefatigable at study, carrying off prize after prize, whose performances, when they come to the more practical clinical part of their course, are disappointing chiefly because they have not realized the importance of practical dissection and of laboratory work in the earlier years of their studies.

And now another caution. We are living in an age of specialization, and there are some respects in which this is advantageous, but there is a great danger lest it should lead to narrowness of view, and during the career of a student there is no place for specialization. Exactly the same course should be pursued whether he intends to become a hospital physician or surgeon, to enter the naval or military services, or, as is the case with the great majority, to earn his living in general practice. It is wiser for him not to make up his mind as to his exact future career until he has completed his course, but to apply himself energetically to get a thorough and general grasp of all the subjects in the curriculum, and this if only because he may be prevented by the force of circumstances from realizing his intentions. He who has the widest knowledge of his profession is best fitted for specialization later. Oliver Wendell Holmes, parodying the proverb, described the ideal specialist as "Jack of all trades and master of one."

The dangers of over-devotion to book-work and of attempting to give rather exclusive attention to one subject or group of subjects beset the ardent and keen student; there are more serious risks for the idle and indifferent. Not uncommonly a student begins with the delusion that the early subjects, such as anatomy and physiology, are not required for medical practice and that he may take the first few years easily, having always a pious intention to reform his ways and to apply himself seriously to the study of medicine and surgery later. No more foolish idea could enter his head. Not only, as we have said, is an accurate knowledge of the ancillary subjects essential for properly learning medicine, surgery, and obstetrics, but there are searching examinations in these subjects to be passed before the student can enter on clinical work. And worst of all, if he begins badly he will acquire habits of slipshod work which will most seriously handicap him in later years. In view of the long and difficult course of study that has to be undergone by the modern medical student it is evident that those who wish to have an idle or frivolous time should be warned beforehand, and should either correct their tastes or abandon their intention of studying medicine and prepare themselves for some other walk in life; and, since both medical study and, still more, medical practice involve great mental and physical strain, none should enter the ranks unless thoroughly sound in health. There have been many men, especially those with a tendency to phthisis, who might have lead a healthy and useful life as, say, colonial farmers, who have succumbed to disease at the end of their course or in the early years of practice. While warning the weak against undertaking a task which is beyond their strength, we would also impress upon all students the importance of attending to their own health. Health is one of a medical man's greatest assets, ranking only next to honest knowledge of his profession. The atmosphere of dissecting rooms, post-mortem rooms, and out-patient rooms, where the unwashed congregate, is always polluted. Part of the student's day will probably be spent sitting over books in lodgings which are not too airy, and the other part in the environment of the hospital or the medical school. These are facts that must be faced by the parents or guardians of medical students. During the early years of study for the medical profession those who are not robust or who have been unaccustomed to town life would often do well to live just out of the town. Many of the medical schools in the provinces as well as in London are conveniently near some large railway terminus, and any extra expense in travelling entailed by suburban residence is generally compensated for by cheapness in rent; but during the last two years of medical study it will be advantageous to the student to have quarters near the hospital, so that the greatest possible amount of time may be given to work in the wards and casualty rooms.

It is imperative that opportunities should be made for getting both fresh air and muscular exercise. All the medical schools in London, and many in the provinces and in Scotland and Ireland have attached to them football, cricket, and athletic clubs, and several have well-equipped gymnasia. The student should join these clubs on entering his school. At most schools there is an inclusive subscription, the various clubs having been amalgamated. By joining them a man not only improves his health, but he comes to know his fellow-students from other points of view than those presented during working hours. Besides, hospital athletics foster the *esprit de corps* which is so desirable in any community. Fencing, bicycling, and pedestrian tramps are excellent adjuncts to the maintenance of health. They are less social but they have their advantages. There is in some cases a risk of excessive devotion to athletics to the detriment of serious work, but this absorption in athletic pursuits will usually only be found among the votaries of the sports that are popular with the crowd. A certain amount of time set apart for exhilarating exercise is beneficial not only to health but to the quality of a man's brain work, and the medical student must remember this. Further, every student should have thorough holidays, and we strongly recommend students to see as much as they can of their own country during their holidays. Walking and cycling tours need not be expensive, and they are of great educational value. The practitioner frequently has to prescribe changes of air, and a local knowledge of suitable resorts will be most useful to him. He may have opportunities to go abroad, when everything we are saying has a more forcible application;

but if he is not so fortunate while in his student days as to see other countries, that must not stop him from seeing as much as possible of his own, where after all it, is most probable his future lines will lie. And while on a holiday he should try to keep up his general reading and should see that he does not altogether neglect his social duties. The student may wonder how he is to find time to carry out all the advice which we give him, yet it is not only possible but need not end in the manufacture of a prig. It can only be done, however, by method and concentration of purpose. Time should be carefully planned out so as to have regular hours for professional reading and for recreation each week, and during the time of work the worker must learn to concentrate his whole mind on the purpose in hand. If he is keeping himself in health by sufficient air and exercise, he will be surprised to find how much can be done in a short time with attention thoroughly fixed on the particular subject. The great Charles Darwin, one of the most prolific of workers, owing to impaired health was only able to devote a small number of hours each day to scientific work, but so closely and methodically did he work during those hours that quite apart from his epoch-making writings on natural selection he made at first hand scientific observations and records which would have occupied the whole working hours of several men less gifted with his power of methodical application.

When the student passes from the school to the wards he should endeavor to hold all minor appointments that are open to him, such as assistant demonstratorships and clinical clerkships and dresserships in the hospital, and when he has passed his final tests he should try to secure a resident post in some good hospital before entering on practice. The best posts, of course, such as those at the teaching hospitals, are few in number, and he may not be successful in obtaining one. They are now awarded not by favor but by careful selection, and the simple way to obtain them is to be the best man competing for them. In the teaching hospitals of London, and in some of the greater provincial institutions, these coveted posts are unpaid, but there are hospitals all over the country where a man may not only gain invaluable experience, but may make enough income at any rate to pay his expenses. Just now it is easier for the newly-qualified man to obtain a resident post than it has been for some years, for qualified assistants are receiving good pay and many young men are taking these berths instead of hospital appointments, but this is a state of things that will not last, and resident appointments have an untold value to the medical man. And after the student has held some resident post he will do well, if he has the opportunity, to try to obtain an appointment on board ship, that he may see something of foreign countries and increase his knowledge of men, but these appointments, which formerly were easily obtained, are now much sought after, and some of the best steamship companies expect their medical men to belong permanently to their service. When the student has become the medical man and enters on actual practice he will find, perhaps to his surprise, that a successful practitioner requires much besides thorough knowledge of his work. The practice of medicine is an art. In the old days it was based entirely on experience and tradition, to-day its foundations are deeper and wider; but although medical practice is increasingly scientific, it remains none the less an art, and unless a man has acquired judgment, tact, and power of influencing his fellow-men, failure may be in front of him, no matter how high the degree which he has taken. In view of this fact the more that young medical men and students see of men and manners the more will they be likely to be of service in their generation.

Every medical student will have heard something, even before he joins a medical school, of the necessity for great discretion with his tongue. He must not think that the quality of reticence should belong to the qualified man only. A student will not have advanced far with his work before he has opportunities for practicing reticence. There is a morbid pruriency at the present time which leads many people to the discussion of medical details, and this morbid tendency is fostered by the naturalist school of modern fiction. The student should learn to practice in all such matters such prudent reserve as he would observe with regard to illness among his own relatives, and he should study how to divert conversation from the discussion of technical professional subjects. One of the greatest charms of medical practice for him later will be the complete and unquestioning confidence with which patients entrust all details connected with themselves and their families to him. Only with the full knowledge thus given him will he be able to advise his patients wisely. He should strive from the very beginning of his medical life to deserve the deep and delicate trust that will later be reposed in him. If he is not as a student a retailer of the medical joke (often obscene) or the hospital gossip (often prurient) it will come much easier to him to keep his lips sealed when later in life he is the steward of sacred confidences.

We have entered into the difficulties which confront the medical student at the outset of his career not to discourage him, but that he may be forearmed. For those who are prepared to work conscientiously and who realize that character as well as intellect are required for the successful practice of medicine there lies open a career which is likely to yield them the highest satisfaction. Most persons enter the medical profession as a way to make a living, but if that be the medical man's only aim he will find his life a barren one. There are not many fortunes made by the practice of medicine. Occasionally some physician or surgeon dies leaving great wealth. Paragraphs instantly appear describing this fortune as amassed by practice, when, as a rule, legacies or fortunate investments account for the greater portion. But the medical man who works hard may reckon to make a modest competence, though the early years are often years of struggle, and though there are factors now imported into general practice which weigh with cruel severity on some practitioners. We refer to the widespread abuse of hospitals and the sweating tactics of some of the medical aid associations, concerning which matters it would be well, we think, if the student were told something toward the end of his career. For then he would enter the medical life equipped with some practical professional knowledge and some desire to work with the body of his profession for its general good.—*London Lancet.*

BUCKTHORN AND CASCARA SAGRADA.

The second number of the sixth volume of the "Ephemeris of Materia Medica, Pharmacy, Therapeutics, and Collateral Information" consists of Dr. Squibb's fourth paper, reprinted from the *American Journal of Pharmacy* for July, on the subject of acetic acid as a substitute for alcohol in the extraction of certain drugs. The author's main purpose, of course, has been to present this pharmaceutical matter, but incidentally he gives considerable information of a therapeutical character.

The bark of buckthorn (Rhamnus frangula), he remarks, is employed in northern Europe for making charcoal to be used in the manufacture of sportsman's gunpowder, and, as the bark of young trunks and limbs, carefully dried, is preferred for that purpose, the market is well supplied with bark suitable for medicinal use. On the other hand, the bark of cascara sagrada (Rhamnus purshiana) is apt to have been taken from old trees. Buckthorn, therefore, is preferable from the pharmacist's point of view. Dr. Squibb thinks that buckthorn has also some therapeutitcal advantages over the other drug. Neither, he says, is a purgatitve or even a good evacuant, but both overcome constipation when used in small doses three times a day, and the effect is not produced until the day after they are taken. A convenient dose of the fluid extract is eight minims, diluted with about an ounce of water, to be taken after each meal of one day and after the first and after the second meal of the following day.

Both drugs act as stimulants to the liver, and it is the increased flow of bile produced by them that gives rise to the laxative effect. Cascara, although not a "therapeutic duplicate" of senna, resembles it in the character and quality of its effects, and has the advantage that the dose required is smaller. Buckthorn bears a similar relation to rhubarb. Cascara has nearly twice the activity of buckthorn, but, like senna, it is prone to gripe; moreover, it often has a lingering action on the lower bowel. In its laxative action buckthorn is not unlike blue mass. Finally, the taste of buckthorn is not so unpleasant as that of cascara.

As regards the pharmaceutical aspect of his article, Dr. Squibb appears to have established the superiority of acetic acid to alcohol for the extraction of these drugs. The acetous fluid extracts contain less sediment and are more agreeable to the taste than those made with alcohol.—*N. Y. Medical Journal.*

GONORRHOEA IN ITS RELATIONS TO INSURANCE.

By D. D. G. HALL, M.D., Dallas, Texas.

Of all the venereal diseases, gonorrhœa may very properly be said to be the most common and its treatment the most unsatisfactory. Few patients have sufficient decision of character to abstain from sexual indulgence for a sufficient length of time until cured, and so the case is apt to have several sub-acute exacerbations, which occasion great annoyance to the physician and dissatisfaction to the patient before a permanent cure can be effected. The first point which has an important bearing upon life insurance is the appearance of the urine during and following an attack.

Few men ever fully recover from gonorrhœa. The pus easily finds a permanent home in the longitudinal folds of the mucous membrane of the urethra, back near the membranous portion; and during micturition the upper portions are pushed off in the form of "gonnorrhœal threads," varying in size from ¼ to 1 inch in length. The experienced eye is able to detect them in about seven out of every ten cases presenting themselves for life insurance. The old pus colonies are always on the alert to spring into new life and produce what is generally supposed to be a new case. The first attack may be very violent, but the subsequent ones are usually more easily controlled. The urethra seems to learn that what cannot be helped must be endured, and so makes but little fuss about it. The gonorrhœal threads, together with the abnormal secretions of the urethra, may give a very respectable reaction for albumin, even after all the acute symptoms have subsided, and the patient honestly believes himself cured. The importance of differentiating between albumin due to gonorrhœa and that from true nephritis cannot be too strongly emphasized. Of course we may call the microscope to our assistance, but a little care will enable a physician to arrive at a correct opinion without it. Some time ago an agent requested me to re-examine a healthy, fine-looking young man, about 22 years of age, who had been refused by another physician because of albuminuria, when upon the most casual observation of the urine it was evident he had suffered recently from gonorrhœa; and in reply to my question he blushingly stated "he had it about two months ago, but was well now." Here was a most excellent risk rejected because of a trace of albumin from the urethra, which could possibly have no effect upon his life, either directly or indirectly.

When we suspect gonorrhœa it is well to ask the applicant to urinate in two bottles. The first may contain albumin, while the second, the urethra having been washed out, may not show a trace. In speaking of albumin, I might as well state that the first urine passed after sexual excitement often shows albumin reaction, due to secretions from the prostate and Cowper's glands. The physician is more apt to meet with this when he goes to the applicant's place of business and examines him unexpectedly than in the office after he has been thinking of and perhaps dreading an examination for several hours. To run over rapidly the history of gonorrhœa, we find it may appear in the male from three different sources: First, leucorrhœa in the female; second, undue sexual excitement and rapidly repeated intercourse, and third and least often, from direct infection from gonorrhœa in the female. Leucorrhœa may produce either violent or mild symptoms in the male, but ordinarily these cases are less severe and yield more readily to treatment than those from Nos. 2 and 3. No. 2 is apt to produce quite as severe symptoms as No. 3, and there is not unfrequently great general inflammation, with serious bladder symptoms, such as hemorrhage and severe pain at the end of micturition, due to spasm of the sphincter urinæ and compressor urethral muscles. Gonorrhœa arising from these last two sources, especially if it be a first case, is sometimes difficult to control, and may run a course from six weeks to three months and even longer. The earlier the symptoms appear after intercourse the more violent they will be. These long cases, which we may call "gleet," are nearly always caused either by stricture or chronic inflammation in the prostatic portion of the urethra. There may be, of course, serious complications in severe cases, such as "acute stricture," due to the great swelling of the mucous membrane of the urethra, sufficient to cause suppression of urine, and necessitate fastening a catheter in the bladder for 24 or 48 hours. There may be orchitis, acute cystitis, and even suppurating bubo. The course of the disease, as well as the after effects, depends to a great extent upon the treatment employed. In my opinion, nearly all bad sequelæ, such as stricture, orchitis, inflammation of the prostate and cystitis depend largely upon the employment of too strong injections.

Of course it is only natural that a physician should have his "hobbies" and "sure cures," and I must confess, after trying nearly all the remedies which have been in vogue during the last fifteen years, I have discarded nearly all of them, and now employ only the most mild and soothing; and I am sure I have more rapid cures and less troublesome after affects than formerly. An injection, in all acute cases, of a solution of boracic acid xx grs. to the ounce of water once in two hours (always after urinating) and the internal administration of a ten-minim oil of sandalwood capsule after each meal, with instructions to avoid intercourse, all kinds of stimulants, and the use of sweets, acids and highly seasoned food, and to drink as much water as the stomach will allow, will in nearly every case produce an amelioration of the symptoms in a few hours. When cases come to a physician second hand, after too strong local treatment has been employed, it may be necessary to discontinue the injection for a few days and rely altogether upon internal remedies. The following sedative mixture I have found to be of great service in relieving spasms of the sphincter urinæ:

℞ Tinct. Cannabis Ind.............................. ℥iss
Ext. Phylotac, Fl.............................. ʒss
Sanmetto ad.............................. ℥iv
Sig. Teaspoonful once in three hours.

One complication which, on account of its persistent character, deserves careful consideration, is gonorrhœal rheumatism. It has been said to attack the lower limbs most frequently, but such has not been my experience. Nearly every case I have seen has appeared in the upper extremities, and especially the shoulders. Ordinary rheumatic treatment has but little effect, and I have obtained better results by combining iodide of potash and mercury with moderate doses of salicylate of soda. I have never known heart lesions to result from gonorrhœal rheumatism, and I think such cases must be exceedingly rare.

Now in regard to the sequelæ of this disease, the medical examiner should use the greatest care to determine the probable result of any complications he may discover. The most serious, as well as the most frequent, is stricture. A slight stricture in the anterior two-thirds of the penis, which has yielded readily to dilatation, and showed no marked tendency to subsequent contraction, cannot seriously affect the risk, and I see no reason why an applicant should not be considered first-class. A stricture of the membranous portion, however, is an entirely different thing, and any applicant who has one should always be rated high; and if it has shown such a persistency to contraction as to require frequent dilatations, he should either be granted a short-term policy or rejected. If there is stricture of the membranous portion, with chronic cystitis, as shown by alkaline urine, pus, etc., it is a poor risk, for stone may form in the bladder due to precipitation of the earthy phosphates and chlorides, or the kidneys become involved and he eventually succumb to chronic Bright's. We must not forget that troublesome strictures may become so small as to resist all attempts at dilatation, when puncture of the bladder through the abdominal walls or rectum must be resorted to.

There can be no doubt but that strictures following gonorrhœa are chiefly caused by too strong injections. Inflammation of the prostate, which may frequently be traced to the same cause, seems to leave more or less enlargement of that organ, for I have noticed patients frequently speak of an increased amount of prostatic secretion, which continues ever afterwards, and which they are apt to confound with true gonorrhœa.

Gonorrhœal ophthalmia sometimes occurs, and although it will not immediately affect the life of the patient it may cause blindness, which then exposes him to greater liability to death from accidents. Of course patients should always be cautioned to pay special attention to cleanliness of the hands during an attack, and avoid rubbing the eyes as much as possible.

We must not forget the serious results which may follow the false passage of sounds, the burrowing of urine and pus, resulting in erysipelas and even gangrene.

In determining the effect of gonorrhœa upon the health of applicants in general, we must first ascertain the frequency of its occurrence. It has been my fortune to travel extensively throughout North and South America and to spend considerable time in Europe, and if we except Ireland and the Scandinavian peninsula, where venereal diseases are not so common, I think we may truly say that no less than 60 per cent. of the entire male population of the most highly civilized nations suffer from gonorrhœa before they attain the age of 30 years.

Prof. Fournier in 1887 quoted the city statistics of Paris in one of the medical journals of that city, and showed that 71 per cent. of all the children born during the previous year had died from syphilis. Now when we all know that gonorrhœa is three times as prevalent as syphilis, what proportion of the male population of Paris has escaped it? It must be very small.

The next question is, how many people die from gonorrhœa, or its sequelæ? Taking into consideration the great prevalence of the disease, we must confess the percentage is very small indeed. Gonorrhœa is not a disease to be found in poor risks; it is rather an indication of health and vigor in the applicant. How seldom do we see a poor consumptive or those affected with other grave constitutional diseases suffering from it! It is a disease of youth and middle age, and therefore is to be found among the very best risks one can select. When a stout, healthy young man, who shows at a glance he is not "sick," walks into the office and takes a seat in a half hesitating way the physician suspects venereal disease before he has even begun his story.

Now, in case an examiner should come across a case of gonorrhœa, what is he to do? If the applicant is otherwise in perfect health, if the case is uncomplicated and apparently likely to run a mild course, I think the examiner should, after relating briefly and exactly the true condition of things, recommend him as a first-class risk. Suppose, however, the ever-cautious medical director should see fit to postpone issuing the policy; who will be the loser, the company or the healthy young man, who can easily obtain insurance a few weeks later in any company he may desire? A case postponed, on account of gonorrhœa, is practically the same as lost to the company, for by the time he has recovered, and the medical director is ready to accept him, he will be safely landed in some other. Of course, there is the moral side of this question. Some may boast that their company does not want immoral risks. This is, as the Israelite would say, not business.

There are the ruins of a house in Pompeii, carefully preserved by the Italian Government, which, on account of the obscene pictures on the wall, is supposed to have been a house of prostitution; and in the same block is a large iron bar projecting from near the top of another building where prostitutes were hanged. As the world was then, so it is, in many respects, to-day. The world makes life insurance companies; not the companies the world.

Thus far all my remarks have referred to gonorrhœa as found in the male.

Insurance companies have less to do with females, and gonorrhœa in that sex is, fortunately for the world's welfare, much less common. It probably is always contracted from infection. The symptoms are frequently less severe than in the male, and yield more readily to treatment. A case taken early usually may be aborted by wiping out the vagina each day with the following ointment, which was once recommended to me by my esteemed friend, Dr. G. Sims, of this city:

℞	Acidi Boracic	ʒiii
	Zinci Sulph	℈iss
	Cup Sulph	grX
	Acidi Carbolici	gttoX
	Vaseline	℥iij

An injection of a warm solution of sulphate of zinc, or alum, three grains to the ounce, should be used once daily shortly before visiting the office. The inflammation may, however, extend to the uterine mucous membrane, and even go as far as the ovaries, causing acute inflammation and even suppuration about those organs. If I were asked to pass upon a female who had suffered within two years from suppurative inflammation of the ovaries I would feel in duty bound to reject her on account of the serious character of the affection and the great liability of there being a return of the symptoms, resulting perhaps in death from acute peritonitis, due to rupture of the abscess into the abdominal cavity.

In conclusion, I would say I have seen several risks postponed and finally lost to the company when, in my opinion, the frequency of this disease the world over, and the small percentage or almost total lack of death from it should influence medical directors to be more lenient in their decisions.—*The Medical Examiner and Practitioner.*

PHENOCOLL-HYDROCHLORATE IN MALARIA.

Phenocoll is a base which unites with acids, forming salts. Some of the recent literature refers to phenocoll-hydrochlorate and some to phenocoll-hydrochlorid. It is probable that the combination with the acid simply affects the solubility of the compound without altering its therapeutic value. The hydrochlorid forms colorless needles or crystaline powder, soluble in sixteen parts of water; if it is added to alcohol the phenocoll is precipitated. It has been employed to a considerable extent as a substitute for phenacetine as an anti-pyretic, anti-rheumatic and anti-neurlagic. One of the most important properties possessed by the drug is that of destroying the malarial parasite, a factor which has led to its extensive use by Italian physicians, one of whom, V. Dall Olio, recommending it in severe malaria. Later, Mondini employed it in inveterate forms of malaria in children with brilliant results. He used it in over one hundred cases, and met with but few failures. He reported a number of cases, among which was that of a child, nine years of age, who had suffered from malarial intoxication and who had an enormous splenic tumor. This child was treated with huge doses of quinine without benefit, while prompt relief was afforded from phenocoll. The dose is from fifteen to thirty grains.—*Medical Review.*

Examination of the Blood; Its Value to the General Practitioner.—At the recent meeting of the American Medical Association, M. Howard Fussell read a paper on this subject, in the Section of Practice of Medicine. He said that in some cases the blood examination is as important and in other cases it is more important than the examination of the urine, and it is already acknowledged that an examination of the urine is necessary in every case. As a general practitioner, the author examines the blood in all obscure cases. As a result of such an examination: (1) The physician will avoid administering iron to a patient because the face is pale, since all pale people are not anemic; (2) it will be found that patients with flushed faces often have decided reduction of the hemoglobin and of the number of red blood corpuscles; (3) patients with cardiac and pulmonary symptoms are sometimes diagnosed as cases of organic disease when a blood examination would reveal chlorosis; (4) blood examination will positively indicate the presence or absence of malaria; (5) the diagnosis between leucemia and other organic conditions, such as tuberculosis and carcinoma of the stomach, may be made; (6) the blood examination, combined with the Widal test, will diagnose between typhoid fever and malaria, or, possibly, show a combination of the two diseases; (7) counting the leucocytes will often give satisfactory results of clearing up obscure conditions. The physician does not need to take a microscope to the bedside of the patient; if the diluting tube is surrounded by a rubber band, the blood may be preserved for a long time, and the counting may be done at leisure.

DON'TS IN CONNECTION WITH HEART DISEASE.—Don't feel called upon to give digitalis as soon as you hear a murmur over the heart. Study and treat the patient, not the murmur.

Don't conclude that every murmur means disease of the heart.

Don't forget that the pulse and general appearance of the patient often tell more than auscultation.

Don't neglect to note the character of the pulse when you feel it. Possibly you may look at the tongue to satisfy the patient; feel the pulse to instruct yourself.

Don't think that every systolic murmur at the apex indicates mitral regurgitation; every systolic murmur at the aortic interspace, aortic stenosis. The former may be trivial; the latter may be due to atheroma of the arch of the aorta.

Don't say that every sudden death is due to heart disease.

Don't forget that the most serious diseases of the heart may occasion no murmur. A bad muscle is worse than a leaky valve.

Don't examine the heart through heavy clothing.

Don't give positive opinions after one examination.—*Philadelphia Medical Journal.*

SCHOLARSHIPS OF THE AMERICAN MEDICAL ASSOCIATION.—In accordance with Dr. Keen's recommendation in his presidential address, the trustees of the American Medical Association have established a fund of $500 to be expended annually for the encouragement of scientific research, but no sum given to any individual at one time shall exceed $100.

INTERFERENCE WITH "CHRISTIAN SCIENTISTS."

In "Pith of Current Literature" in the current issue, a paper on "Christian Science," by Dr. Harry T. Marshall, is abstracted from the *Bulletin of Johns Hopkins Hospital.* In his conclusions as to the method of dealing with this remarkable delusion we think the true keynote has been struck in a careful distinction between the protection of the community and interference with the individual. To attempt to protect the individual, against his own free will, from the absurdity of his cherished convictions is, apart from the questionableness of its moral justification, highly impolitic, and is sure to invest the principles attacked with that most powerful auxiliary, a sympathy arising from seeming persecution with its halo of martyrdom. If a man, from a firm conviction of his powers, chooses to risk his life in walking across a morass which his neighbors believe to be impassable, that is his affair, and both their duty and their right to interfere end with warning and argument. But if he attempts to force some unwilling individual across, or to persuade a child, incapable of forming a rational opinion for itself, and under such constraining influence as parental control or other guardianship, to go, the community may then, if need be, justly take restraining measures. Again, if he is bound by a rope to others in such wise that he cannot proceed without dragging them in also and involving them in his danger, then not even the sanctity of a religious belief on his part will rightly withhold them, and all other folk, from preventing him, by force if need be, from imperiling other lives than his own. And these are things that the Christian Scientist does when, for instance, he allows a child to burn to death, as is said recently to have happened (*New York Medical Journal*, July 14th, p. 70), without making any effort to extinguish the fire, relying solely on his own peculiar theories for aid; or when, while treating diphtheria in a willing patient by his own cranky notions, he takes no measure to prevent the spread of the infection to others. He may choose not to believe in the commonly supposed dangers as held by others if he pleases, so far as it concerns himself alone; but, if he can not proceed without the risk of dragging others into the morass, those others have an indefeasible right to restrain his individual liberty in order to preserve themselves from the danger they see ahead.—*New York Medical Journal.*

A THERAPEUTIC NOTE ON ASPIRIN.

By Dr. OTTO LEHMANN, Berlin.

According to my experience with aspirin, this preparation has been well tolerated by many patients without any complaints regarding disturbances of the stomach, nausea, impairment of the appetite, and the like. Its taste is also much more pleasant than that of sodium salicylate, and if taken with three or four times the quantity of sugar it has a rather agreeable acid taste. The absence of cerebral disturbances is another advantage of aspirin over the salicylates, and the cases in which it produced tinnitus were much less frequent. In only two instances a slight ringing in the ears was noticed, while in other cases in which the sodium salicylate had been refused on account of very troublesome disturbances of hearing and of a feeling of heaviness in the head, aspirin, given in 15 grain doses, 3 to 4 times daily, was found entirely free from these disorders. Chronic rheumatic patients repeatedly testified to their satisfaction in being freed from the unpleasant effects of sodium salicylate. In acute cases also this advantage could be readily appreciated. If, for instance, the two remedies were alternated, it was found that while their influence upon the disease was equally good, there was a difference as to their influence upon the auditory apparatus. The reason why aspirin produced auditory disturbances, although of a much milder degree than the salicylate, in the two instances referred to, could not be determined. In both cases the condition of the stomach was very bad, and both parties shortly before the occurrence of the rheumatism had been troubled with anemia, gastric and nervous debility. According to Wohlgemuth's experiments, aspirin is dissolved only slowly to a limited extent in the presence of dilute acids. Whether in the patients referred to, owing to the impairment of the gastric functions, the aspirin was retained for a longer time in the stomach, and underwent there processes of solution and decomposition—this could not be demonstrated.

In this connection it may be mentioned that in general the absorption of aspirin takes place rapidly. As early as 30 to 60 minutes after the administration of the first dose, the urine, when tested with liq. ferri sesq., shows the customary salicylic reaction.

No injurious influence upon the heart and pulse was noticed by me, even during several weeks' use of the drug. As an antipyretic it is inferior to the remedies in common use.

While from what has been said above, aspirin deserves the preference over sodium salicylate as an antirheumatic, it is likewise an excellent analgesic. I have been repeatedly informed by patients who complained of intense pains which prevented night rest that even within an hour after taking the first dose of aspirin (15 grains) the pains had materially diminished and that a refreshing sleep had ensued. In various cases of sciatica and occipital neuralgia this action was clearly manifested, the most brilliant results being obtained in a typical case of intraorbital neuralgia, in which the attacks appeared at 11 in the morning and continued for one and one-half hours. The patient took the first dose of 15 grains one hour before the occurrence of an expected attack, which had recurred for a number of weeks, and was delighted to note that in place of it there was only a trace of the customary pain which was of short duration. During a week aspirin was administered every evening, forenoon and at 10 o'clock, in doses of 15 grains, and since then the neuralgia has not recurred, notwithstanding the lapse of two months.

Without entering into the description of other cases I would say that aspirin is a most excellent substitute for sodium salicylate which is free from its unpleasant after-effects, and is also a most serviceable antineuralgic in many instances.—*Therapie der Gegenwart, April, 1900.*

A NEW AND EFFICIENT ANTI-PLASMODIAL.

Every physician who practices in a malarial district realizes that many cases of paludal poisoning are beyond the curative power of quinine. This drug cannot be invariably relied upon as a specific, especially in the forms of the disease resulting in chronic cachexia. In such cases the physician turns to arsenic, and this drug rarely fails to meet his expectations.

The results obtained in a large number of cases evidence the clinical value of Hemaboloids as a powerful regenerator of plasmodial blood in cases resistant to quinine. In order that the preparation may be rendered still more certain in its blood enriching power, and also more directly antagonistic to the malarial organism, Hemaboloids-Arseniated (with strychnia) has been placed on the market. By means of this preparation, the physician can administer at one and the same time:

1. An efficient blood enricher and tissue food (Hemaboloids).
2. An anti-malarial and general tonic alterative (arsenic).
3. A powerful general nerve stimulant and tonic (strychnia).

This combination is highly efficient in the immediate antidotal antagonism of malarial infection and the subsequent blood enriching and tissue reconstructing treatment, raising the point of bodily resistance so as to prevent subsequent plasmodial invasion.

After prolonged experimentation the manufacturers of this product have succeeded in preparing a true organic nucleate of arsenic, a definite chemical combination, and not simply a mechanical mixture of arsenic and nuclein.

As Mitchell Bruce tells us that "arsenic enters the blood and combines with the corpuscles (not the serum) as an albuminate," the advantage of such an organic combination is readily appreciable.

The arsenic existing in this form in Hemaboloids-Arseniated (with strychnia), is ready for immediate appropriation by the red corpuscles as soon as it enters the blood stream.

Each tablespoonful contains the equivalent $\frac{1}{40}$ grain arsenious acid and $\frac{1}{80}$ grain strychnia. The dose is one tablespoonful three or four times a day—children in proportion.

CENTRIFUGAL ANALYSIS OF URINE.

C. W. Purdy, in the *Journal of the American Medical Association,* urges the importance, from a practical standpoint, of urinary analysis. Very valuable knowledge is thus obtained of the progress and changes in acute disease. To this end he sets forth the importance of a knowledge among practitioners of the methods employed in laboratory work. The author has worked for five years on his method of estimating the chlorides, sulphates, and phosphates of the urine by sedimentation. By careful study he has learned that the results obtainable may be compared with those reached by weighing, etc., in laboratories, although at first he looked for proximate results only. He employs a centrifuge with four tubes, adds the different reagents in proper proportion, allows them to stand for five minutes, and revolves the machine for three minutes at exactly 1,200 times a minutes After removal, the percentage of precipitates in the different solutions is read off on the scale.

BOOK REVIEWS.

THOMPSON'S PRACTICAL MEDICINE. A Text Book of Practical Medicine. By William Gilman Thompson, M.D., Professor of Medicine in Cornell University Medical College, New York city; Physician to the Presbyterian and Bellevue Hospitals, New York. In one octavo volume of 1,010 pages, with 79 engravings. Lea Brothers & Co. Price, cloth, $5.00; leather, $6.00, net.

The author in his preface says: "A Text Book of Medicine should not only summarize all the phenomena of common diseases, but should also afford a legitimate field for the author in which to add the testimony of personal acquaintance with those rarer affections which may have been encountered, as well as his deductions concerning treatment, which may prove of value to other practitioners."

To summarize all the phenomena of common diseases—then if that is to be done within the space of 1,000 pages or so, the summary must be brief. Yet that is the intention and the limit of one volume text books of medicine.

Dr. Thompson's summaries are brief, many of them very brief, and the type is large.

About one-third of the book treats of the infectious diseases, and is, we think, the most satisfactory section, especially the articles upon typhoid fever, malaria and pneumonia. Of the other sections the one upon the Diseases of the Digestive System is somewhat fuller than the others, and that part of the book which deals with the Diseases of the Heart has seemed to us most unfortunately brief. The volume throughout is made up of many short articles. All of these contain a surprisingly large amount of information in few words, but much of the book is so condensed and categorical as to resemble in appearance and effect a quiz compend.

Throughout the book the most satisfactory facts are those devoted to treatment. These are rather fuller than is usual in such books, include the personal experiences of the author, and are most valuable.

The book does not appear to us to cover the ground thoroughly enough in the matters of pathology, symptomatology and diagnosis, to be a satisfactory text-book for the student who is buying one book. To the advanced student or general practitioner, the therapeutic view-point of the book, its terse, clear style, and the large experience and reputation of the author will commend it.

PRACTICAL URANALYSIS AND URINARY DIAGNOSIS. A Manual for the use of Physicians, Surgeons and Students. By Charles W. Purdy, LL.D., M.D. Fifth Revised and Enlarged Edition, with numerous Illustrations, including Photo-Engravings and Colored Plates. F. A. Davis Company, Philadelphia.

The publication of the fifth edition of this little book is enough of itself to vouch for its success in the past. The book is in every way practical, and we have found it at its best in the laboratory.

New features in this edition are tables for use in the author's method of Centrifugal Analysis for the approximate determination of bulk percentages of Chlorides, Phosphates, Sulphates and Albumen, and a section on the Microscope in Urinary Work. The book is recognized as a standard one, and the new edition is to be welcomed.

A Manual of Personal Hygiene. Edited by Walter L. Pyle, A.M., M.D. Assistant Surgeon to Wells Eye Hospital, Philadelphia, &c., &c. Contributors, J. D. Cortney, M.D.; George Howard Fox, M.D.; E. Fletcher Ingalls, M.D.; Walter L. Pyle, M.D.; B. Alexander Randall, M.D.; G. N. Stewart, M.D. (Edin.); Charles G. Stockton, M.D. Illustrated. W. B. Saunders & Co., Philadelphia. Price, cloth, $1.50, net.

A number of well known men, each of whom has achieved distinction in some special department of medicine, have collaborated in writing a book on Personal Hygiene.

Each contributor has written an article on the hygiene of that part of the body with the diseases of which he is especially familiar.

The result is this little volume with the mark of distinction, and in its way, of authority.

The style of the book throughout is such as to make it especially suitable for nurses and intelligent lay readers, but there are chapters in it that it will be well for the average physician to read and personally ponder.

The Treatment of Fractures. By W. L. Estes, A.M., M.D., Director and Physician and Surgeon-in-Chief St. Luke's Hospital, South Bethlehem, Pa.

This book describes the treatment of fractures in a practical and interesting manner and is replete with original drawings, photographs and skiagraphs. Printed upon heavy book paper and substantially bound in cloth, containing about 250 pages. $2.00. Also,

The Technique of Surgical Gynecology. By Augustin H. Goelet, M.D., Professor of Gynecology in New York School of Clinical Medicine; Consulting Professor of Gynecological Electro-Therapeutics, International Correspondence Schools, Scranton, Pa., etc.

This book presents to the reader the technique of gynecological operations in a manner combining simplicity with completeness. The various subjects are individually discussed and graphically illustrated with a large number of drawings and sketches especially prepared. About 300 pages. Same price as above.

These two works are thoroughly practical and all details are carefully elaborated. Every general practitioner should possess a copy of each. Ready for delivery about September 25th. Published by the International Journal of Surgery Co., Medical Publishers, 100 William St., N. Y.

We have also received:

Practical Materia Medica. For Nurses. By Emily A. M. Stoney, author of Practical Points in Nursing. Saunders, Philadelphia. $1.50, net.

Lessons on the Anatomy, Physiology and Hygiene of Infancy and Childhood. For Junior Students. Consisting of Extracts from Lectures given at Rush Medical College. By Alfred C. Cotton, A.M., M.D. Chicago Medical Book Co., Chicago. $1.50, net.

IN SAUNDERS' QUESTION COMPEND SERIES.

Essentials of Medical Diagnosis. By Solomon Solis-Cohen, M.D., and Augustus A. Eshner, M.D. Second Edition, Revised and Enlarged. W. B. Saunders, Philadelphia. $1.00, net.

Essentials of Surgery. By Edward Martin, A.M., M.D. Seventh Edition, Revised and Enlarged. W. B. Saunders, Philadelphia. $1.00, net.

Essentials of Medical Chemistry. By Lawrence Wolff, M.D. Fifth Edition. Thoroughly Revised. By Smith Ely Jelliffe, M.D., Ph.D. W. B. Saunders, Philadelphia. $1.00, net.

We are in receipt of a very instructive and valuable brochure with the title, "Diabetes Mellitus, Its Detection and Successful Treatment," the same containing several admirable papers by Drs. Heinrich Stern, J. P. Sheridan, W. Beck, R. B. Glass, Chas. M. Hickey, and A. P. Buchman.

The several articles are very interesting and give valuable instructions on this most important subject. The book is beautifully illustrated and is not only worthy of perusal but of the careful study of every thoughtful physician. The illustrations of microscopical and test tube demonstrations are works of art and very convincing. The book is copyrighted by Mr. Chas. Roome Parmele, its publisher, and may be secured by addressing him at 36 Platt St., N. Y. City.

A point of special comment is the fact that Arsenauro has been proven by these workers to be almost a specific, surely a valuable agent in the treatment of diabetes mellitus.

THE RHEUMATIC HEART, WITH ESPECIAL REFERENCE TO TREATMENT.

Under this interesting title Dr. Sansom speaks in the *Clinical Journal* of January 31, 1900, of this important theme. He says to his readers: "You do not need to give salicylates; there is nothing of discomfort that the salicylates would do good for. What about increasing the force of the circulation and of the heart? You say, what about digitalis? This man had some digitalis, tincture of digitalis 15 minims and sodium iodide 5 grains. The pulse-rate was increased from 44 to 72, was much more regular, the rhonchi cleared up, and all the lung signs have gone. After the pulse-rate got up to 72 it went down again to 44, and then we stopped the digitalis and gave the patient belladonna. Now concerning the treatment of these cases by digitalis, we have only two words to say—use judgment. Always remember what you want the digitalis for. Digitalis is to increase the force of the heart muscle to do the work properly. In cases of mitral regurgitation where the right heart is enlarged, pari passu, with enlargement of the left heart, digitalis does much good, and in cases carefully selected you may keep a patient on digitalis. But you have always got to watch its effects, because it is possible that by and by it may cease its good effects and do harm. You know by experience that cases of mitral insufficiency with dropsy may begin to pass more water and begin to breathe better, the heart gets much more in order, things are put right, and the patient goes on admirably on digitalis. But in a few, after the urine has been increased abundantly and things go on well, you find the patients begin to feel not quite so well, and the urine begins to decrease. In that case the digitalis has not acted alone on the heart; it acts on the vessels also, and contracts them too much. The digitalis may cause vomiting in some cases, stoppage of urine instead of increased flow in others, and in a few cases irregularity of the heart instead of continued regularity; in some cases undue slowing of the pulse instead of its maintaining its proper rhythm. So it may fail sometimes in mitral regurgitation, but a great deal more often in these slow-going cases of mitral obstruction. Why is that? Digitalis increases the force of action of the muscle of both ventricles. But in mitral stenosis the left ventricle does not want it; there is no difficulty for the left ventricle to empty itself into the aorta. In extreme mitral stenosis, for example, there is no regurgitation at all; in some cases there is some regurgitation into the left auricle, but it is only exceedingly little; the difficulty is to get blood into the left ventricle. There is not a pumping back into the left auricle, as in mitral regurgitation; there is not enlargement of the left ventricle, as there is in mitral regurgitation. There is no dilatation, and there is no hypertrophy. Then you act disproportionately if you give digitalis for any length of time—you act disproportionately upon the right ventricle. The more you get the right ventricle to work, the more you may drive the blood into the venous circulation, including the liver; therefore, it is not likely to do so much good. There is no doubt that for a limited time it does very much good. Five to ten minim doses of the tincture, or drachm doses of the infusion, or grain doses of the leaves three times a day, do good for a limited time. When you find it does not do very much good you have to wait. In some cases it does not do good at all. The great difficulty is that the right ventricle is overdone. You may do a great deal then by letting out a little of the distention. Bleed from a vein and learn to bleed; you may save lives entirely by bleeding properly and at the right time. Some people will not hear of being bled, but they do not mind a few leeches. Dry cupping you can do, but wet cupping makes people flee in horror. Do not be afraid of popular prejudices. When you have thus relieved the tension in the right heart digitalis will perhaps do good. But you can give another cardiac tonic, namely, convallaria and caffeine, but particularly convallaria. When the action of the heart is slow you can give another heart tonic, namely, belladonna.

"Therefore, to sum up very briefly, there is the first-class of cases, in which there is undoubted rheumatic fever and evidence of mitral regurgitation, and where your first point of treatment is to keep down the rheumatism and make the patient comfortable by treating him with salicylates or salicin. The second thing to do is to keep up the force of the heart judiciously, but not without due circumspection—if necessary with digitalis, and then give alkalies, because they do good. In the second-class of cases you have no chance of treating the rheumatism. Salicylates are not required; you have no chance of using them for rheumatic phenomena, or very rarely; and then you have to improve the circulation in all the ways you can; you may improve it by rest and quiet, or by digitalis, or by any of the heart tonics judiciously applied.

"There is another thing to be said to you very briefly. In mitral obstruction you have got a gradual narrowing of the mitral orifice produced without any obvious symptoms, and slowly going on through the course of years. Now, you will want to know, or your patients will, what about mechanical treatment, what about exercise, baths, and bathing? Let us look at the years which are gone by; what might happen? Supposing such a subject were 'coddled up,' the contraction would get more and more pronounced, the circulation would become more and more congested, aand the patient would become more and more languid and feeble. Now, supposing we use mechanical means for increasing the driving power of the right ventricle, we do a good thing. We can do that by massage; we can help the venous circulation by massage; we can also do it by exercises. It is not a good thing for a patient like that to be taught to 'cave in.' If there is anything acute you must give the patient a rest for a time; then let him have exercise gradually and carefully, and before active exercise is commenced use massage. Baths are very good indeed. Perhaps we have heard too much about systematic bathing, but it is a good thing. Certaintly unsystematic coddling is a bad thing. If you put the heart to rest long, you know that the heart muscle will get feeble. If we took a blacksmith's arm and told him not to use the hammer, but instead tied it up tightly to his chest, it would waste. So the heart will get feeble if you let it rest too much. Supposing we were to tell you to have a good hot bath three times every day, what would happen? We think you would feel limp; you would bleed into your own skin and subcutaneous tissue, and the heart would be weakened, because there would be dilatation of the vessels. But if you were afterwards told to take a cold sponging, that would tend to make the heart act quicker and better, and in that case the heart would be toned up. That is where the benefit of baths comes in; the warm bath should be followed by a cold sponging to tone the heart muscle up. Exercises should be graduated. Remember that this slow-going insidious heart trouble must be met by gradual means for getting the system over its difficulties, and bringing it near to perfect health. It cannot be quite perfect health, because there must be perfection of structure for perfection of health; but the best substitute for perfect health should be aimed at, namely, a well-compensated heart, and that is all you can get. But by these means judiciously carried out, the patient may be placed in fair health for years."—*The Therapeutic Gazette*.

GAILLARD'S MEDICAL JOURNAL.

A MONTHLY JOURNAL OF MEDICINE AND SURGERY

Scientia et Veritas Sine Timore.

PUBLISHED BY THE NEW YORK MEDICAL PUBLISHING CO.,

116 Nassau Street, NEW YORK.

All communications, of either business or editorial character, should be addressed to Gaillard's Medical Journal, 116 Nassau St., New York.

Articles for publication will be received with the understanding that they are contributed exclusively to this journal. Reprints will be furnished at actual cost, orders for which should accompany the manuscript. Authors of accepted articles may receive twelve copies of the issue in which they are published. Necessary illustrations will be furnished without expense to authors when suitable drawings or photographs are furnished.

EDITORIAL.

Malaria: Its Varied Expressions and Accompaniments.

The importance of the subject has justified us in selecting malaria for special consideration in this issue of the JOURNAL, but this being the specific season when malaria is at its height, makes it the more appropriate that this October edition be given up to a liberal discussion of this topic.

Malaria, like charity, has been made to "cover a multitude of sins" for which it is not responsible. Indeed, almost as many diagnostic blunders have been made in the name of malaria as political crimes have been committed in the name of liberty, and these blunders and crimes, I doubt not, will continue to the end of time.

It behooves every worker in the field of medicine to determine from the start to the finish of his work to be a careful, a correct diagnostician—most medical blunders are made through carelessness rather than ignorance.

In the vocabulary of many physicians malaria is honestly but mistakenly made to represent too much.

The term malaria means "bad air," and so, technically, any diseased condition resulting from the breathing of impure air would come under that heading; but it must be remembered that the victims of sewer gas, illuminating gas, or vitiated atmospheres in general have not malaria, though they are doubly susceptible to it.

Malaria proper is due to the plasmodium of Laveran, and usually manifests itself by well-defined chills, followed by fever, subsequent intermission, and repeated chills, followed by fever, unless interfered with.

It is needless to emphasize the fact that quinine is not only the antidote for the plasmodium, but a helper in making a diagnosis.

* * * *

While the microscope is the confirming factor in making a diagnosis of malaria, it must not be forgotten that clinical evidence can usually decide the question with those of wide experience.

* * * *

In these modern days malaria manifests itself in a less definite way than formerly. Well expressed chill and pronounced fever, with intermission, are much less frequently met with than formerly. The tendency of malaria latterly has been to express itself in a less distinct way, a hybrid manner as it were, no well defined chill, and often no fever, and frequently in the form of a remittent or low continued fever; hence the frequency now of failure to properly interpret symptoms as those of malaria, or, as too frequently happens, the ill-defined manifestation of other serious diseases are attributed to malaria.

* * * *

The first stages of a tuberculosis infection, before local signs appear or before a chance for using the microscope presents itself, are often wrongly attributed to malaria, and the same may be said of deep, out-of-the-way suppurations. Golden opportunities have often been lost to the victims of tuberculosis and other infections involving septic symptoms by careless routinists, who interpret anything as malaria. At the same time the one-sided specialist and the severely scientific (?) diagnostician frequently translate the hybrid ill-defined case of malarial poisoning into a classical specimen of organic or some other specific disease.

* * * *

It is to be hoped that more and more all practitioners will form the habit of not only examining, or having examined for them, the secretions of their patients, but the blood as well, and thus become more and more exact in their work as the years pass. It is well to remember, however, that these examinations must not only be carefully made and the evidence strengthened by repetition, but the results must not be taken alone, but only as they dovetail or harmonize with the clinical story, the bedside picture.

Daniel Drake, the great physician and teacher, of Cincinnati, in the early days wrote classically in his work on the "Autumnal Fevers of the Mississippi Valley" regarding malaria, and every physician desirous of being well informed should study this work. So, too, Surgeon John M. Woodward, of the U. S. Army, some twenty-five or thirty years ago, studied, observed and wrote ably upon malaria and kindred topics. As a result of his investigations he coined a term which he believed covered not only a condition, but a theory and a fact, viz., typho-malarial fever.

While granting that this term is a misnomer, and has misled many able practitioners in the direction of ignoring the typhoid bacillus in these cases, yet to a degree Woodward was right.

In malarial districts we surely do have frequently cases of infection from the Eberth bacillus, plus the plasmodium of Laveran, just as we frequently have the Klebs-Loeffler bacillus infection added to scarlet fever. So, too, we often meet, particularly in the Mississippi Valley, cases of so-called " bilious remittent fever," running from one to eight weeks, interpreted and treated as typhoid fever, and when so treated they frequently die. Primary free purgation, frequently repeated with heavy doses of quinine, also frequently repeated, is the determining factor here.

* * * *

In discussing malaria, a therapeutic thought not to be forgotten is that, since the conditions inviting malaria as well as malarial infection (and all other infections, too, for that matter) favor the checking, paralyzing and perversion of secretions, it is absolutely essential in the outstart to flush severely the alimentary canal and all the rest of the animated system of sewerage, and to maintain an open condition throughout the conduct of the case of all the excretory organs.

It goes without saying that in the beginning the withholding of all food is essential, and later it should be given sparingly and in a most digestible form.

Where the above course is pursued quinine given heroically will have full opportunity to do its best work.

* * * *

Nothing has been more clearly established in the experience of the careful physician than that an open condition of the emunctories and the administration of the bitter barks and nux vomica in a proper modicum of good Burgundy wine, three or four times a day, is the best prophylactic against malarial poisoning as well as tonic for the convalescent victim of it.

The Duty of Physicians in Teaching Their Patients Practical Hygiene.

Every doctor, no doubt, grows tired of preaching to his patients regarding their duty along the lines of hygiene, but we should "never grow weary in well doing." The ignorance of most people, even the cultured ones, regarding the simplest rules of health is patent to every physician, and we can often do better work by recognizing and meeting this condition than in any other way.

All that the world has to-day in the way of knowledge in the preventing of disease it owes to the medical profession; but there is still a splendid field for work in the direction of humanity's best good.

May we not hope to see the time in the not distant future when the doctor will be, as suggested recently by Dr. I. N. Love, "the health counsellor, in constant charge of the child from its conception to maturity and on through life, helping to build, and maintain through life, a manly, robust equipment, guarding against and preventing disease, as the wise legal adviser guides and directs his client how to avoid litigation."

Mr. Charles F. Wingate observes (in a recent issue of the *Saturday Evening Post*):

"The popular ignorance of practical hygienics is amazing; witness our recent experiences in camps and on transports during the Spanish war, the prevalence of typhoid and other 'preventable' diseases, with the alarming spread of tuberculosis and cancer. A hundred years hence historians will consider our city slums and sweat-shops, our acres of crowded tenements, with no bathing facilities, our adulterated food and drink, our blind trust in drugs and quack remedies, and the popular dread of fresh air and neglect of exercise, with the same wonder that we regard the jail fevers and smallpox of John Howard's time, and the Black Death during the Middle Ages. If cleanliness be next to godliness, we sorely need sanctification. We need a new evangelist to preach the sanitary gospel and to inculcate the value of the ounce of prevention.

"Both children and adults ought to learn such elementary facts as that a leak in a water-pipe is not so dangerous as a flaw in the house drain; that slimy wooden washtubs are not suitable for a kitchen where food is prepared; that a damp, dark or dirty cellar is a nesting-place for germs; that 'sewer gas' is created in foul house drains as well as in sewers; that hidden pipes are always to be suspected, and that the best plumbing requires periodic inspection and testing. People must also learn to appreciate the money value of sanitary safety, and not spend lavishly on furniture and decorations and grudge any outlay for health. They should distrust the 'cheap' plumber, who is usually an ignoramus or a fraud. 'Better be sure than sorry' is a wise maxim; and fresh air and good drainage are a better investment than drugs and doctor's bills.

"Through such means and by such methods as I have described we may anticipate the time when scurvy will be as rare as leprosy; when an epidemic of typhus or typhoid will disgrace a community; when a food adulterer will be given as short shrift as a Western horse thief. City streets will then be shaded and flushed with salt water if obtainable: double-decker tenements will be forbidden by law; venders of cheap candy will be driven from school doors and fresh fruit sold instead. Every tenement will have a fireproof stairs, and, in winter, warmed halls; when a 'scamped' building falls and causes loss of life the contractor will go to prison. Finally, when a Waring devotes his trained skill to improving public health, he will be paid as much as the sheriff or police justice, and not 'turned down' at the next election or forced to eke out his meager salary by the bounty of his friends."

It is well for us to realize, with Maurice Thompson, that "money is not happiness, nor is financial success the whole of life." A very little observation shows that our existence here gathers such enjoyment as it is capable of realizing from sources not controllable by the purchasing power of money. The laws of health, for example, are more important than the secrets of trade in the race for a true goal of human success. Of what avail would millions of money have been to Keats when he began to die at twenty? The flawless health of Gladstone at eighty made his voice a nation's trumpet blast. Bismarck's sound nerve centers were more to Germany than the gold at all the banks. A sound body, with a sound character imbuing it, will command success when a nation's overflowing treasury may be wasted in vain against the tide of calamity. In a word, success comes of health. Not mere physical equilibrium, but that higher health which insures contentment based upon justice, charity and righteous reward for life, is the sine qua non. A healthy soul in a pure physique will find its way to such success as may well be envied.

Malaria and the Mosquito Theory.

Laveran's discovery of the parasite which causes malaria was a pronounced step forward in our knowledge of the disease, but not by any means so radical and important as the development of the fact, years before, that the bark of the cinchona tree was a definite enemy to the malarial poison.

Daniel Drake, in the earlier days of our medical history, was a persistent student of this almost universally distributed disease, and in his work published years ago with the title "Autumnal Fevers of the Mississippi Valley" he presented contributions which stand to-day as almost classical.

The earlier as well as later students, observers and writers on the subject have favored the thought that the mosquito was in some manner closely related to malaria. As far back, in fact, as the beginning of the Christian Era, writers touched upon the relation of the mosquito to malaria, and among the early American writers along these lines may be mentioned Mitchell, of Philadelphia; Nott, of New Orleans (in 1848); and King, of Washington (who published a pamphlet in 1883), giving numerous plausible reasons for sustaining the theory.

The mosquito theory has been continuously studied, not only by Laveran in 1891 (he who discovered the malarial plasmodium); Pfeiffer, who evolved the specific germ of la grippe; as well as Bignani, but the great Koch, whose name will ever be associated with the practical demonstration of the cause of tuberculosis, has for several years devoted much time and study to this branch of germ life.

A recent writer observes:

"The fact that the malarial parasite is paludal in its habits, and that the mosquito is a blood sucker and also paludal in habit, is extremely suggestive of this connection. The idea, however, did not take definite form until Patrick Manson, in his Goulstonian lectures, delivered in 1896, set forth a definite hypothesis, based on certain well-established facts, namely, that the malarial parasite possessed a flagellating phase, that this phase is developed from the mature parasite, that it is evolved only when the parasite is outside the human body, that the flagella, when formed, break away from the parent parasite, and that, when free, the flagella were capable of living as independent organisms. He was thus led to believe that the flagella was the extracorporeal phase in the life history of the parasite. As it was impossible for the latent form in which this organism originated to escape from the human body by itself, it was necessary to invoke the assistance of some outside agency. The most probable agent was the mosquito, and Manson supposed that the flagellated body was sucked, in its latent form, into the stomach of the mosquito and developed therein. The flagellæ then broke away from the central sphere, and in virtue of their locomotive power traversed the blood in the mosquito's stomach, penetrated the stomach wall, entered some cell and started the "outside-of-the-body" life of the malarial parasite. Manson still believed, however, that malaria could be air or water borne, for he supposed that on the death of the mosquito the parasite was liberated, and either inhaled from the air or carried into the system in drinking water."

All these theories regarding malaria are most interesting, but the facts of most vital import are those related to the cure of the disease.

The æstivo-autumnal parasites are energetically at work everywhere now.

Reports from South American countries are confirming definitely the fact, already observed and announced by many eminent medical men throughout America, that the synthetic product of organic chemistry, phenalgin, is of great value in fighting these parasites. From five to fifteen grains of phenalgin may be given every two to four hours. Inside of forty-eight hours the average attack of malaria will be aborted. Not only will this course of treatment be antagonistic to the poisons of malaria, but will soothe and relieve the distressing symptoms accompanying it, reducing the fever, allaying the aches and pains and causing a restful sleep.

Nowhere does malaria assume a more virulent form than in the tropical countries, and when we have such pronounced results in favor of phenalgin as an effective malarial germicide it is convincing. Following the above course for adults ten grains of quinine (in capsules) accompanied by the same amount of phenalgin may be given at bedtime for two or three nights, after which a tonic composed of the following may be given three times a day for a week or ten days, viz.:

Quinine Sulphate	½ dram
Fowler's Solution	1 dram
Water	6 ounces
Glycerine	2 ounces

Shake. Dose: A tablespoonful at meal times.

Asheville Meeting of the Mississippi Valley Medical Association.

The second largest and most important medical organization in the United States, the Mississippi Valley Medical Association, meets this year at Asheville, N. C., from October 8 to 11, inclusive. The fact that Asheville is one of the most attractive and popular health resorts in America; that a single-fare round trip rate has been secured for all delegates and their friends; that the meeting room, exhibit halls and rooms for all delegates will be under the same roof (the Battery Park Hotel), and the additional fact that the "land of the sky," where Asheville is located, is the most invigorating, recreative spot almost in America, will draw hundreds of doctors not only from the Mississippi Valley, but from the East, with which Asheville is in such close touch.

President Harold N. Moyer, of Chicago; Secretary Henry E. Tuley, of Louisville, and the executive committee (Drs. J. M. Mathews, Dudley S. Reynolds, Thos. Hunt Stucky, Lewis S. McMurtry, and J. W. Holloway, of Louisville; Dr. Arch Dixon, of Henderson, Ky.; Dr. Duncan Eve, of Nashville, Tenn.; Dr. I. N. Love, until recently of St. Louis, but now of New York city; Dr. Chas. A. L. Reed, of Cincinnati; Drs. Geo. J. Cook and W. N. Wishard, of Indianapolis; Drs. Chas. H. Hughes and Wm. Porter, of St. Louis; Dr. A. H. Cordier, of Kansas City, and H. O. Walker, of Detroit) have prepared a splendid scientific programme, and Dr. Fletcher, of Asheville, chairman of the Committee of Arrangements, aided loyally by his colleagues, has arranged a delightful series of entertainments, including a visit to Biltmore (the Vanderbilt reservation), receptions and carriage rides galore, and a banquet presided over by the prince of medical gentlemen, Dr. S. W. Battle.

The general orations will be delivered as follows: "Surgery," Dr. Chas. A. Wheaton, of St. Paul; "Medicine," Dr. I. N. Love, of New York.

* * * *

By the way, there are many strong arguments in favor of medical meetings being held at popular watering places, among which may be mentioned:

1. The delegates are furnished opportunities for familiarizing themselves with the features of the place from a health standpoint.
2. They are themselves benefited by the health features of the place.
3. With all the delegates gathered under one roof or in hotels, close together, and in the absence of city allurements, they cannot lose each other, and thus become better acquainted; and, best of all, the scientific sessions are never deserted for other attractions.

Death of Dr. Hunter McGuire.

In the death of Dr. Hunter McGuire the medical profession of America has lost one of its best men and the profession of the South one of its idols. It seems hard to think of Hunter McGuire being dead. He filled so much space in the records of the work in surgery; he was so faithful to the profession during the decades since 1860, and it seems difficult to realize his dropping out of the ranks.

Hunter McGuire had superb opportunities early in life and he met them in a superb manner. In the beginning of the Civil War he became medical director in the Confederate army, although a very young man. He was on the personal staff of General Stonewall Jackson, his intimate friend and personal physician, and was with him when he died. He was also the personal physician of Jefferson Davis, the president of the Confederacy. At the close of the war he took up his home in Richmond, his home city, immediately taking front rank. It was the pleasure of the editor of GAILLARD'S to have known Dr. McGuire intimately and personally for many years, and besides knowing his sterling worth as a surgeon, he admired him and was devotedly attached to him as a sturdy, lovely and lovable man. It is not surprising that he had so many friends throughout the South and throughout the nation. He was at one time or another president of all the leading medical societies in his section, and a few years ago was elected unanimously president of the American Medical Association. He at one time was president of the American Surgical Association. He leaves a vacancy in the realm of surgery which it will be difficult to fill. He leaves a son, Dr. Stuart McGuire, of Richmond, to succeed him of whom it may be well said, "He is a worthy son of a worthy sire."

The vacancy in the editorial staff left by the death of Dr. Hunter McGuire has been filled by selection of his son, Dr. Stuart McGuire.

EDITORIAL COMMENT.

The world eats too much—or at least the eating is too unevenly divided. Some are eating more than they should, but many thousands are eating too little, but only for the reason that they can't get the food to eat.

It is a serious question as to which is the most unfortunate—he who dies from eating too much or the victim of starvation: the first probably has the advantage of dying happier; the latter though is likely more resigned when he dies. Some of our worshippers at the shrine of good living who, ere they know it, may, like the late Vice-President Hobart, die a victim of excessive dining, can sympathize with my poetical friend, who wrote after a recent heavy dining:

In the gleaming of the gloaming
  When the glooming glim is glum,
With a lobster salad roaming
  Up and down my tummy-tum,
I am prone to idle dreaming
  And the morbid fancies swim
In the glooming of the gleaming
  When the gloaming glum is glim.

In the glimmering of the glumming
  When the gloaming is agleam,
And the custard pies are thrumming
  On my innards like a beam,
I am prone to nightmares swimming
  Through my fancy sick with doom,
In the glooming of the glimming
  When the glimming is agloom.

"The agglutination test," or the test known as the Grüber-Widal reaction, which consists in a running together into heaps—a "clumping" or "agglutination"—of the bacteria, when the serum of an animal artificially immunized against that organism, or the serum of a patient suffering from the specific disease caused by the same organism, is added to a broth culture, has proved of great clinical value, and its importance is now generally recognized for the diagnosis of typhoid fever, cholera, plague, and Malta fever. In addition the *London Medical Review* recently notes the fact that—

> "Dr. Ernst Bendix, of Prof. Von Leyden's clinic, has (*Deutsch. med. Woch.*, April 5. p. 224) now applied the same principle to the diagnosis of phthisis. In a hanging drop specimen of a perfectly pure and homogeneous culture, the preparation of which the work of Dubard and Arlonis and Courmont has only recently rendered possible, the tubercle bacilli present more or less lively movements, the nature of which—whether molecular or vital—is uncertain, and they never adhere to one another. On adding a single drop of the serum of a tuberculous patient to such a culture, typical clumping follows, and the bacilli adhere together in large immobile masses. To test its clinical value, Dr. Bendix applied the test in 40 individuals, noticing in each case the degree of dilution in which the serum retained its agglutinative properties. In two perfectly healthy young men, even the undiluted serum produced no clumping; in a third clumping was obtained with the undiluted serum, but not if it were slightly diluted ($\frac{1}{3}$d to $\frac{1}{5}$th. The serum of 3 patients suffering from nontuberculous diseases likewise gave negative results. The serum in the remaining 36 cases was obtained from tuberculous subjects, in 28 of whom the diagnosis had been confirmed by the discovery of tubercle bacilli in the sputum. Here the serum reaction was absent in 2 cases only."

The point may well be made that if the "Widal test" is applicable to so many infectious diseases, it scatters or diffuses its value as a specific feature in the diagnosis of any one of them, taking its place alongside of fever and other symptoms or clinical evidence. It is likely, however, that the more it is studied the more it will be found that the "clumping" or "agglutinating" tendency will develop features peculiar to each disease, the same as the temperature manifestations have. Respecting the Widal test in tubercular infection, the *London Review* says further:

> "As regards the degree of dilution in which the serum of a tuberculous person produces clumping, a curious point was brought out. Contrary to what might have been expected the greatest dilution was possible, and this means that the clumping property was most marked in the serum of early cases, in which phthisis was only suspected, or where the process was very chronic. Every gradation was found between these cases, where a dilution of 1 in 30 or even 1 in 50 produced clumping, and the two cases where the reaction was absent altogether, and which were of an extremely florid and acute type. The explanation of these facts may perhaps be found in some experiments of Arlonis and Courmont, who found that the agglutinative power of a serum, obtained from an

> animal rendered tuberculous experimentally, varied inversely with the intensity of the infection, that is with the virulence of the bacilli and the susceptibility of the animal to tuberculosis. Thus the greatest agglutinative power was possessed by the serum of comparatively refractory animals, which had been infected with attenuated cultures."

Only in cases involving obscurity and uncertainty of diagnosis will the Widal test prove of greatest value. It must not be forgotten that in typhoid fever it is not applicable before the fifth to the thirtieth day, and it does not appear at all in some well defined cases of the disease.

* * * *

Who cannot echo this thought of Elbert Hubbard?

> "So she believes me when I tell her that her little brother was found by the doctor under a cabbage leaf and that Santa Claus is a jolly old man with white whiskers who gives pretty things once a year to all good children.
>
> "Some day I will tell her better—before she discovers it herself and believes me untruthful.
>
> "And as the years go by and count themselves with the eternity that lies behind, I shall not be here; and she will do as I have done and as you have done—stand by an open grave and ask in anguish. 'If a man die shall he live again?' And the falling clods will give no sign and the winds that sigh and sob through the trees will make no reply; but hope and love will answer yes."

* * * *

The numerous friends of Dr. Hamilton A. West, of Galveston, will be delighted to know that the numerous newspaper statements announcing his death during the recent terrible tornado were untrue. He has been very busily engaged in relief work from the beginning of the terrible calamity.

Think of a community losing one-fourth of its population by death, all within a few hours! It is impossible to grasp the awfulness of the event. Volumes could be written on it!

* * * *

We clip the two following paragraphs from the *American Journal of Surgery and Gynecology* (of St. Louis), under the heading "Removed to New York:"

> It is announced by the daily press that after twenty-five years' successful practice in St. Louis, Dr. I. N. Love has removed to the city of New York, where he becomes professor of internal medicine in New York Post-graduate Medical School. At one time Dr. Love had the largest and best general practice in the city, and at all times for the past quarter of a century has been a prominent figure in local and State medical societies. His many friends here will miss his genial companionship, while even his enemies predict a successful career in the great metropolis. But the expression, "Dr. I. N. Love, of New York," will sound queer for many a year to thousands who know the distinguished doctor, editor and teacher.

With the departure of Dr. I. N. Love from St. Louis, this city loses one of its most prominent medical journalists. But the *Medical Mirror* is not to go with Dr. Love to the city of New York, where it is to be hoped he will find even a wider sphere of usefulness than he has enjoyed in St. Louis. By its offer of $1,000 cash for the best essays on the prevention and cure of tuberculosis the *Medical Mirror* has been brought to the attention of every physician in this country; and doubtless of every advertiser as well. Doubtless a great financial harvest will be reapt—and deservedly. Dr. Love is certainly to be congratulated on the success already attained by the *Mirror*. May its reflections be of wider extent and of greater influence from its new editorial home.

GAILLARD'S takes pleasure in endorsing and emphasizing the above, and welcomes most heartily Dr. Love to New York, and wishes him all the success he may desire.

Dr. John B. Murphy has accepted a Professorship in Surgery and Clinical Surgery in the Northwestern University Medical School—Chicago Medical College. Dr. Murphy has been appointed Surgeon-in-Chief of Mercy Hospital, with the direction of the surgical teaching in that hospital. He will give two clinics each week at the hospital. The hospital now contains 260 beds, with abundance of clinical material. A new amphitheatre with a seating capacity of 300 is in progress of construction.

Dr. Archibald Church has been recently appointed Professor of Nervous and Mental Diseases in Northwestern University Medical School—Chicago Medical College—and head of the Neurological Department.

If you are thinking of taking a short winter vacation you could not do better than to take into consideration the beauties and advantages of Berúmda.

A sail of less than forty-eight hours in one of the magnificent steamers of the Quebec Steamship Co. brings you to these delightful islands.

Messrs. A. E. Outerbridge & Co., of 39 Broadway, will, on request, furnish you with all information.

GAILLARD'S MEDICAL JOURNAL.

VOL. LXXIII. NEW YORK, NOVEMBER, 1900. No. 5.

RENAL CALCULI, WITH REPORT OF CASES.*

By STUART McGUIRE, M.D.,

Professor Principles of Surgery and Clinical Surgery University College of Medicine; Surgeon in Charge St. Luke's Hospital; Visiting Surgeon Virginia Hospital, Richmond, Virginia.

Stones in the kidney are formed by the precipitation of the salts of the urine, and may be composed of urates, oxalates or phosphates. They vary in number from one to one thousand, and in size from a few grains to several ounces. They are usually formed in the pelvis of the kidney, but occasionally develop in the substance of the organ. They are irregular in shape from restricted motion and absence of attrition, and are frequently moulded to represent casts of the cavity in which they are contained. Renal lithiasis is supposed by most writers to be due to an hereditary or acquired diathesis, from the frequency with which stones are found in different members of the same family, and from the predisposition which lithemia, oxaluria and phosphaturia seem to give to the disease. The most recent investigators, however, are inclined to the view that they are due to bacterial infection.

A stone may exist in the kidney without producing symptoms, and then is termed an unsuspected calculus. It may at one time give trouble and later become fixed or imbedded and cease to annoy the patient, and then is termed a quiescent calculus. It may by its constant and abortive efforts to escape cause frequent and atrocious pain, and then is termed a migratory calculus.

A renal calculus may cause no local irritation or constitutional symptoms. It may change its position so as partially to obstruct the outflow of urine and thus cause gradual dilitation of the kidney, or hydronephrosis. It may suddenly and completely block the ureter, resulting in atrophy of the kidney, and, if the other organ has previously been destroyed, cause retention of urine, or anuria. It may by constant mechanical irritation lessen the resisting power of the kidney and result in suppuration from infection either through the blood stream, or by continuity or contiguity of tissue. If the pelvis of the kidney is involved it is termed pyelitis; if the parenchyma, it is termed pyelonephritis; if the adjacent tissue, it is termed perinephritis. If the kidney is converted into a pus sac it is called pyonephrosis.

---

*Paper read at the Annual Session of the Medical Society of Virginia held at Charlottesville, Virginia, October 23-25, 1900.

With the foregoing introduction we take up the diagnosis and treatment of renal calculi, a subject of great importance owing to the frequency of the disease, the horrible suffering it causes, and the importance of its early recognition in order that appropriate measures may be applied before irremediable complications follow. I shall endeavor to show that when a stone is known to exist in the kidney an operation should be done for its removal, not as a last resort to save life, but as an early effort to save the organ. For an early nephrolithotomy—or incision of a healthy kidney for the removal of a stone—entails little risk, gives permanent cure, and is not attended by mutilation; while a late nephrectomy—or removal of a hopelessly diseased kidney from destructive changes due to suppuration or distention—is followed by high mortality, frequently persistent and annoying fistulæ and the sacrifice of an important organ.

The diagnosis of renal calculi is sometimes extremely difficult to make, as there may be absence of several of the so-called cardinal symptoms; or the symptoms may be referred to another organ; or the symptoms of another disease attributed to a stone. Often a calculus has caused the death of a patient and been found in the post-mortem without its presence being previously diagnosticated, and often a kidney has been opened for suspected stone without one being found to confirm the diagnosis.

The symptoms caused by a stone in the kidney are due rather to obstruction than to the actual presence of a foreign body, and hence depend more on its position than on its size or shape. They are pain, the passage of fragments of calculi, the presence of crystals, blood and pus in the urine, frequent and urgent urination; and irregularity in the quantity of urine passed, varying from complete anuria to marked polyuria.

Pain accompanying renal lithiasis may be due to fresh deposit of salts on the calculus, or to pressure on the kidney from the passage of gas in the colon, or to the engagement of the stone in the ureter and its effort to escape. The pain may be one of two types; either a more or less constant dull ache or feeling of weight and tension in the lumbar region of the affected side—which is markedly increased by exercise; or an acute but intermittent paroxysm of pain, radiating in the direction of the bladder, which is typically seen in the condition known as kidney colic. Tenderness, or pain due to pressure is also usually observed. It may be elicited by palpation over the kidney and ureter. Attention has been called to a peculiar stabbing pain which is sometimes produced by percussion.

The passage of fragments of calculi is a symptom usually wanting, but when present, is of great diagnostic importance. The frequent and persistent existence of certain crystals in the urine also gives indication of the presence and character of the stone.

Hematuria is usually slight, paroxysmal and transitory. It is due to the mechanical action of the rough stone on the delicate structure of the kidney. It is usually microscopical in quantity, but is markedly increased by riding, driving, dancing or renal palpation. It always diminishes or disappears under complete rest.

Pyuria, or pus in the urine, is merely indicative of infection of some part of the urinary tract. There is no way to tell from the appearance of the corpuscles the origin of the epithelial cells that formed them unless they come from the actual secreting cells of the kidney itself. Pus in sharply acid urine indicates a renal origin.

Frequent and urgent urination, often seen with renal calculi, is reflex from irritation of the kidney or ureter. It has been noted that while it may be troublesome in the day it is usually relieved at night.

Irregularity in the quantity of urine passed is due either to reflex influences or to purely mechanical causes. Physiological stimulation or inhibition will increase or diminish the amount of urine passed, and obstruction of the ureter by a calculus, especially if intermittently affected, will have the same effect.

The value of the Roentgen Ray in determining the presence or absence of stones in the kidney is now being widely discussed. Some experimeters claim that a skiagraph gives definite positive or negative evidence. Others state that it is unreliable as it sometimes fails to show calculi that are known to exist, and sometimes apparently shows the presence of calculi when they are afterwards proved to be absent. The difficulties to be overcome are the thickness of the trunk, and the lack of marked difference in the opacity between the soft tissues and certain varieties of calculi. The pictures obtained are rarely clear, and there is a personal equation in the way they are construed. The day will undoubtedly come when the X-Ray will be used in cases of suspected renal calculi with the same mathematical precision it is now employed in injuries of bone and the location of bullets, but for the present, except in rare cases, the work can only be done satisfactorily by a very few experts.

As has been stated, in many cases of kidney stone it is impossible to make a positive diagnosis despite a careful study of the history of the patient, a prolonged and painstaking observation of the symptoms, a rigid and exhaustive chemical and microscopical examination of the urine, and repeated skiagraphs of the trunk. An exploratory operation is justifiable, however, if inflammation of the kidney or its pelvis develops; if the patient suffers from frequently repeated attacks of kidney colic, or if the pain is severe and intolerable. Under these circumstances intervention is safe and precautionary; delay is dangerous and risky. It is true a stone may not be present, but some other pathological condition will be found which equally demands correction. Henry Morris, of England, reports having operated on forty-four patients for renal calculi without finding a stone. He objects to the term "negative exploration" being applied to these cases, and forcibly says: "It is not a 'negative' result to find and excise commencing foci of tuberculous disease; to fix a misplaced or freely shifting kidney; to open and scrape away half a dozen small abscesses or suppurating cysts; to excise a solid renal or perirenal tumor or tense cyst; to discover and give exit to blood extravasated beneath the fibrous capsule, or pent up within the cavity of the kidney; to liberate a kidney hampered by tough adhesions due to perinephritis provoked by sprain or other injury or disease; or to detect and divide an ureteral stricture or obstructing valve. Yet these are some of the conditions which have been met with in the search for stone in the kidney and which in many instances have been most successfully cured."

The nature of the operation necessary for the relief of renal calculi depends on the pathological changes which have ensued in the kidney. If the stone has not caused infection with suppuration, or produced obstruction with dilatation, then nephrolithotomy, or simply opening the kidney, removing the stone, with suture of the renal incision and closure of the lumbar wound is all that is necessary. If the stone has caused suppuration and there is pyelitis or pyelonephritis, or if the stone has caused obstruction of the ureter and there is hydronephrosis or pyonephrosis, then either nephrotomy or nephrectomy must be done. Nephrotomy consists in opening the kidney, removing the stone and then draining the renal cavity through the incision in the flank. Nephrectomy consists in the complete removal of the kidney. It may be done by either the lumbar or abdominal route, the choice being determined largely by the size of the tumor.

CASE I,—Stone removed. Actual size.

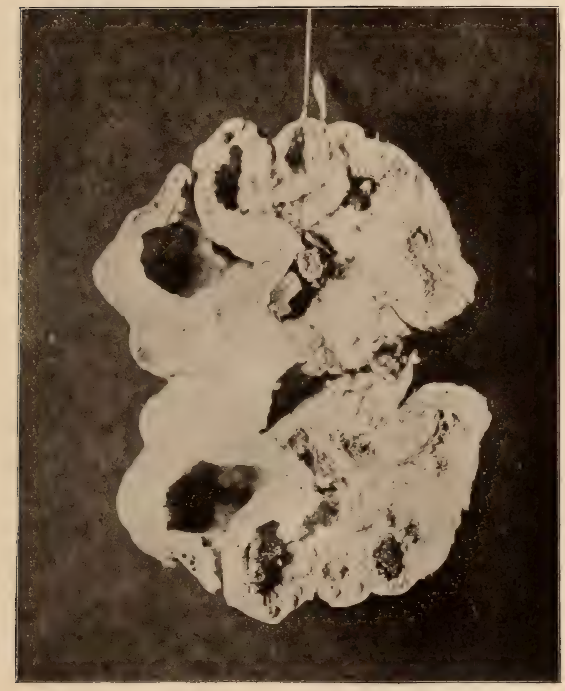
In place of giving a "text-book" description of these operations I will briefly report four cases I have recently had, three at St. Luke's Hospital and one at the Virginia Hospital, as they beautifully illustrate the subject.

Case 1.—Nephrolithotomy for calculus uncomplicated by infection or obstruction. Mrs. L., aged 32, for the past two years had suffered with a constant ache in the right lumbar region, and on three or four occasions had had acute attacks of pain simulating nephritic colic. Clinical symptoms pointed to a calculus in the kidney, and the urine, which was strongly acid, showed a small amount of albumen, a large quantity of pus, and the constant presence of renal debris. There was no blood. Two separate attempts were made to get a skiagraph of the kidney, both times with unsatisfactory results. Despite the uncertainty of the diagnosis the patient consented to an operation. An incision was made parallel with and an inch below the last rib, beginning three inches from the spinous processes of the vertebra and extending forward and outward some five inches. The kidney was readily reached, loosened from its fatty attachments and delivered through the wound. Palpation and an exploratory puncture with a needle located a stone in one of the calices. This was removed through an opening made in the convex border. Examination of the ureter was negative. Bleeding was slight and easily controlled by deep and superficial sutures. The kidney was returned to its proper position and anchored by several silk sutures and the wound closed, with gauze drainage at its most dependent point. Recovery was uneventful, the only untoward symptom developed being pain due to passage of blood clots from the pelvis of the kidney to the bladder. A recent examination of the urine shows that the pus has disappeared and the patient is well. The stone, in size, shape and appearance, resembled an Indian arrowhead, and was composed of an uric acid nucleus around which had been deposited oxalic salts.

Case 2.—Nephrotomy for calculus followed by infection and suppurative perinephritis. Mr. B., aged 28, came of a rheumatic family and had suffered in past years from several attacks of kidney colic. He gradually lost strength and flesh and finally took his bed with symptoms too indefinite to admit of a certain diagnosis. He was treated by his family physician for malaria and enlargement of the spleen and when first seen in consultation was reduced almost to a skeleton by suffering and sepsis. His abdomen was greatly distended and a fluctuating mass could plainly be felt pointing in the left lumbar region. The diagnosis of a perinephritic abscess, probably secondary to suppuration of the kidney from a calculus, was made, and despite the unfavorable condition of the patient an immediate operation advised. He was moved to the hospital the next day and the abscess opened by the usual lumbar incision. About two quarts of stinking pus escaped and the exploring finger introduced into the cavity through the wound could detect nothing but space. The patient was too near dead to permit of thorough examination, drainage was inserted and he was hurried to bed. The wound drained unmeasured and incredible quantities of pus; wild delirium set in and for days his recovery was deemed hopeless. Finally he began to rally and the first evidence of consciousness was complaint with his bladder. An old and tight stricture of the deep urethra prevented the introduction of a sound, but tenesmus was so frequent and violent that from the history of the case it was apparent the calculus had entered the bladder. A supra-pubic cystotomy was done and a stone about the size of a cherry seed found and removed. Recovery afterwards, though slow, was uneventful. The lumbar and supra-pubic wounds healed without a fistula and the patient ultimately gained over forty pounds in weight. Though now apparently in good general health, at times he still suffers with paroxysmal pain in his back, followed by profuse pyuria, and it is recognized that he has pyonephrosis with occasional relief by drainage through the ureter into the bladder. A second operation is indicated to complete his cure.

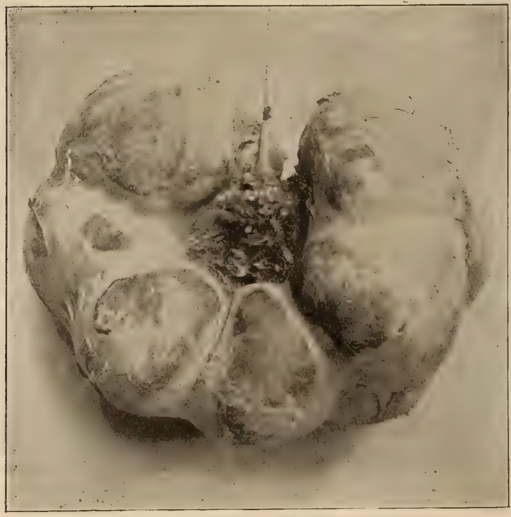
Case 3.—Lumbar nephrectomy for calculi followed by infection and destructive pyelonephritis. Mrs. P., aged 39, suffered some ten years ago with repeated attacks of kidney colic. Two years ago an abscess formed in the region of the right kidney, pointed in the flank and was opened by her local physician. Both urine and pus drained freely at first, but later only pus escaped. At the time of her admission to St. Luke's Hospital there were two fistulæ, one over the kidney and the other over the dorsum ilii. The patient was greatly emaciated from constant suppuration, and suffered so greatly that morphia had to be given regularly and in large doses. Repeated and careful examinations of the urine failed to detect any abnormality in either its quantity or quality. It was believed that the kidney had been practically destroyed and had ceased to perform its function, and it was therefore determined to remove it. An incision was made first parallel to the outer border of the erector spinæ muscle, beginning just below the twelfth rib and extending to the crest of the ilium, and then turned sharply out for several inches in the direction of the umbilicus. The triangular flap thus made was dissected back, exposing a large dense cicatricial mass which completely invested the kidney like the thick hull of a cocoanut. So firmly adherent was it to the kidney and the surrounding tissues that it was found impossible to peel the kidney from its bed or to separate the mass from the surrounding tissues. With a sharp scalpel the mass was dissected out until the vessels which formed its pedicle were reached. These were ligated and divided, all hemorrhage was stopped and the wound lightly packed with gauze, the ends being brought out at the angles of the wound for drainage. The incision was closed with interrupted sutures of silkworm gut and the margins approximated with a continuous suture of silk. Drainage from the large infected area at first was very profuse, but gradually grew less and finally stopped, leaving a neat, clean scar. The improvement in the patient's general condition was rapid and marked. Morphia was soon discontinued and weight increased over ten pounds in the six weeks' stay in the hospital. The kidney, on section, was found to be filled with stones and completely infiltrated with pus. Its function had evidently long since ceased. The stones were all of the phosphatic variety and blocked the pelvis and ramified like branches of coral into the calices of the kidney.

Case 4.—Abdominal nephrectomy for calculus producing ureteral obstruction and hydronephrosis. Miss W., aged 23, had a history of attacks of severe pain in the abdomen eight years ago, which was followed by the slow formation of a lump which had gradually increased in size until now it produced considerable deformity. Urinary examination was absolutely negative. Physical examination showed a movable fluctuating tumor in the lower left part of the abdomen. It was about the size of a child's head and was thought to be either an ovarian cyst or a distended kidney. An accurate diagnosis being impossible an exploratory operation was advised. An abdominal incision

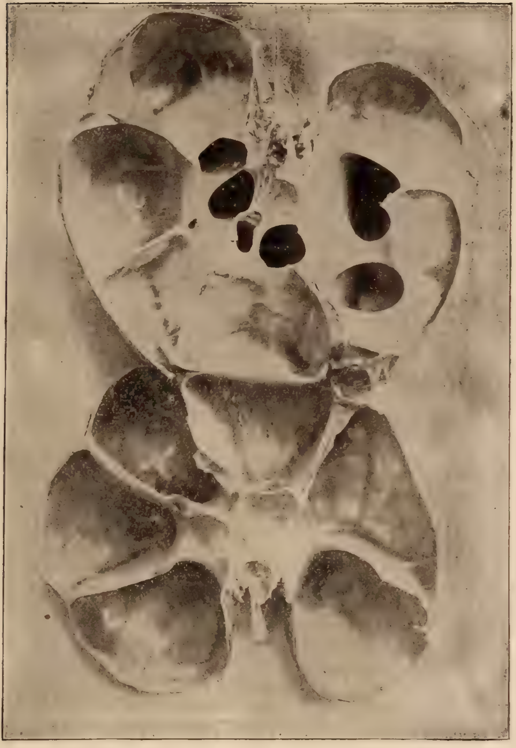


CASE III.—Pyelonephritic kidney, filled with calculi.

was made in the left linea semilunaris over the most prominent part of the swelling and the tumor at once presented itself. It was found to be covered by the posterior layer of the peritoneum and was known to be the kidney. The peritoneal covering was divided and the tumor rapidly freed from its bed, brought through the wound and laid upon the skin of the abdomen. The ureter was ligated, disinfected and returned to the cavity. The small pedicle which remained was tied in sections and cut off, and the abdominal incision then closed. The patient made an excellent recovery and is now in perfect health. The tumor was a beautiful illustration of hydronephrosis, due to occlusion of the ureter by an impacted calculus. The stone was only slightly larger than a garden pea and was lodged in the lumen of the ureter half an inch below the point of its emergence from the pelvis of the kidney.



CASE IV.—Hydronephrotic kidney, unopened.



CASE IV.—Hydronephrotic kidney, opened.

EXAMINATION OF THE BLOOD IN DISEASE.*

By M. H. BOWMANN, M.D.,
Professor of Bacteriology, Toledo Medical College, Toledo, Ohio.

It is only within recent years that blood examination has taken an important place in the study of disease. It has by no means cleared up the whole field of pathological conditions, but that it has helped us wonderfully in diagnosing pathological conditions, the growing literature on the subject well attests.

Ordinarily the blood is sterile and contains no pathogenic or nonpathogenic organisms. Both the tissue juices of plants and animals are normally free from micro-organisms—when the contrary fact exists it is evidence of pathogenic condition. It was once claimed that the chyle ducts took up bacteria from the intestinal canal after each meal, and that these bacteria were emptied into the circulation. Neisser clearly demonstrated this to be untrue and showed that the circulation was normally free from bacteria—the chyle never being carriers of infective material from the alimentary canal.

Since the blood is a tissue composed of certain definite cells of almost uniform constancy, and since they are analogous to those cells of the larger organism which they go to nourish and support, it is but reasonable to conclude that a toxic agent or any morbific material which impairs the one must necessarily impair the other.

The blood corpuscles float in the fluid plasma and pass directly through the capillary walls to support the various tissue cells. If the blood cells are impaired or carry with them toxines from the blood to the tissue cells, there must necessarily follow impairment of the latter or a retrograde degeneration sets in.

Mansfield Holmes, of Denver, has beautifully and clearly set forth this idea in his study of blood in tuberculosis. While his claims are not all accepted, it is beyond question that he is developing a very substantial foundation in the study of the blood for an early diagnosis in tuberculosis. If we admit that the toxine of tuberculosis passes early into the circulation and this toxine is carried by corpuscles thoroughly vitiated and probably undergoing the early stages of degeneration, the tissues which receive them must also receive the toxine bearing material at the same time. This readily shows us how to explain the early wasting of tuberculosis long before we can make a positive diagnosis of the tubercle bacillus. The toxic material is carried by a toxic overburdened blood, whose cells have become seriously impaired if not partially destroyed before reaching their destination. We have impaired blood cells which fail to perform their function, resulting in impaired tissue nourishment. Now the tissue cells will show under the microscope their degeneration, and Holmes is prepared to show that the blood cells are the first to give evidence of this degeneration by their method of taking up stains. In other words, healthy cells give a different hue to those of tuberculous cells.

---

*Read before the Lucas County Medical Society, April 6, 1900.

Holmes reports 100 cases examined during various stages of tuberculosis, and reaches the following conclusions:

First. The degree of the tuberculous condition may be estimated (a) by the amount of deviation from normal percentage of each variety of cells; by the amount of cell disintegration in each variety.

The degree of recuperative power may be estimated (a) by the staining power of the nuclei; (b) by the percentage of leucocytes, with no evidence of disintegration; (c) a relatively high percentage of young cells; (d) the abundance of well stained granules of phagocytes; (e) and the abundance of eosinophile cells rich in granules.

These observations of Holmes' are well worth investigation further. They appear to me to be based on the basic principle of science, and their careful observation will yield enormous results with reference to the early treatment of tuberculosis.

Regarding tuberculosis, we have been pursuing phantom treatment for many years. Would it not be well for us to consider carefully this suggestion for an early diagnosis, when the chances are and must be in favor of recovery under proper treatment.

The phagocytes of the blood render us much and valuable information. This theory, first advanced by Metchsnikoff, or rather by Sternberg and elaborated by Metchsnikoff, has been violently assailed on one side and ably defended on the other.

In brief, the claim is that the polymorpho-leucocytes are the scavengers of the body, and act as warriors on the defensive when invading bacteria attack the system. The lymphoid cells or mono-nuclear leucocytes take no part in this work.

In the area involved may be found large numbers of phagocytes overcome by the bacteria or their toxines, while their nuclei show them to be disintegrating or breaking down. These are the vanquished defenders. In the area between the parts involved and sound portion may also be found large numbers of lucocytes, the nuclei of which are found in a different state, showing them to be in a normal condition and actively engulfing the bacteria within their meshes.

Thus, when the system is attacked by invading organisms, there is forthwith a large increase of leucocytosis throughout the system.

We may take advantage of this condition in making examination of the blood and it will render us valuable information. In the eruptive stages of scarlet fever we have a most extensive leucocytosis, while in measles, on the contrary, there is no increase in leucocytes. In pneumonia there is a diminution of eosinophiles or almost total absence. Thus in pneumonia in favorable cases there is a decided leucocytosis of 8 to 12 to 15 and 20,000 or more. These cases of pneumonia do well and progress to a favorable termination as a rule. On the other hand, if there is no leucocytosis, or only a slight increase, an unfavorable prognosis must be made.

In other instances examination of the blood shows the various pathogenic organisms provocative of the disease. Thus, in fatal cases of pneumonia the displococcus of that disease is usually present in the blood. Kohn, of Berlin, reports 18 cases of pneumonia where bacteriological examinations were made. No diplococci were found. Recovery in every instance. In seven examinations where diplococci were found —fatal termination. Two examinations where the diplococci were found, recovery after production of metastasic abscess. Three cases, no bacteria in blood—death of one patient from cardiac collapse, the two others from grippal pneumonia. Two examinations, no pneumonococci—death from staphylococcus empyema. Of Kohn's 32 cases, 18 showed no infection of blood and recovery; 7 showed infection and death; 5 cases showed no growth from culture, with death from secondary causes; 2 cases showed growth of pneumonococci, and recovery after metastasic abscesses. It is remarkable that in those cases where there was no leucocytosis, diplococci were found. Probably the toxine was sufficient to overwhelm the leucocytolic process in these cases.

The blood is perfectly able to take care of non-pathogenic organisms and they are soon eliminated. They produce no disturbance in health, but in correlation with other diseases they are found in abundance. In the cadaver the colon bacillus is found most constantly in the blood. This invasion begins about the death agony, when all vital resistance has passed. This invasion must always be taken into consideration in cadaveric examinations.

Staphylococci are found in the blood as a result of divers infections, such as furunculosis, osteomyelitis, puerperal uterine infections, surgical wounds, endocarditis. These are not constant infections. The gonococcus is found in the blood as a result of gonococci melostoses, and can often be detected in blood as result of gonorrhœal endocarditis.

Streptococcus erysipelas is found in the blood and lymph in all cases of erysipelatous infections. Streptococcus pyogenes in scarlatinal anginas, ulcerating endocarditis and acute tuberculosis. Also it is the most constant cause of death in puerperal infection. Doleris, of Paris, states that in all cases of puerperal infection in which the streptococcus pyogenes was found in the blood resulted fatally.

The typhoid bacillus can always be found in pure culture by aspirating the spleen. It is often found in the venous blood and is always the cause of typhoid phlebitis.

It can be found in the abdominal petechia of typhoid eruptions.

The methods of securing the blood requires the most careful technique. The best is to cleanse the arm, ligate and aspirate 5 c. c. from the brachial vein. A drop taken from the surface can never be positively free from contamination. Again, one drop may and again may not happen to contain any bacteria. Cultures should always be made with the aspirated blood.

I consider it unnecessary to call your attention to the blood in leukemia chlorosis and allied affections. In these cases the characteristics of the red and white cells are so well known that I will not dwell on them in this paper, though their examination is a very important matter in clinical diagnosis.

In malaria a diagnosis without microscopical examinations may succeed; the failures, however, will be large in an extended list.—*American Medical Compend.*

CLIMATE: A FACTOR IN THE TREATMENT OF TUBERCULOSIS.

By FRANCIS CROSSON, M.D., Albuquerque, N. M.

The importance of climate as a factor in the treatment of tuberculosis is daily manifesting more and more its importance, whether taken separately or coupled with the various alleged specific plans of therapy now advocated and employed in this important branch of practice. Physicians now are informing themselves more widely upon this vital question; and the experience gained by the practitioner residing in a country possessing such almost ideal climatic conditions as are to be found throughout the extensive territory of New Mexico are being looked upon with more interest and consideration than has heretofore been accorded them. I am not a "climate" crank, but having been a sufferer from pulmonary tuberculosis for many years, and having devoted much time, study and travel in a practical investigation of this subject, I may, without being considered egotistical, lay a reasonable claim to being qualified to speak and write authoritatively on the subject of climate. My travels have included the entire United States, Canada, portions of Alaska, and Mexico as far south as the isthmus. Points of especial study with me were noted health resorts, such as Asheville, N. C.; Jacksonville, Fla.; San Antonio, Texas, and the various Pacific coast towns in southern California. My interest in the subject has been a genuine one, as will be readily conceded when it is stated that the primary object of my wanderings was to select for myself a suitable residence—one where I could enjoy at least proximate health, if not secure absolute recovery from my disease. The primary and all important prerequisite for any diseased condition of the air passages or lungs is an abundant and never-failing supply of oxygen derived from an atmosphere approximately free from moisture and noxious ingredients, highly rarified, containing a large proportion of oxygen, electricity, and ozone—in other words a pure, dry, aseptic air. Whatever may be the belief in any special therapy employed in a given case, I must insist from the knowledge acquired as the result of constant practical observation, that pathological lung tissue will, in all cases, respond to treatment promptly in a suitable climate, i. e., where climatic and hygienic conditions have due meed of consideration. Near the seacoasts, in low, swampy and marshy places, and in most large cities, the atmospheric conditions are invariably against the patient suffering from, or threatened with, tubercular or other diseases of the lungs and respiratory tract. To throw off, retard or recover from these conditions patients should be sent into the elevated plateaus of the country, preferably to mountainous regions, with a moderate altitude. Mid-ocean has its advocates, and doubtless possess certain advantages in point of pure air, especially in cases of tuberculosis complicated with syphilis. Prof. Lieberkuhn, the eminent German physiologist, states that the altitude most favorable to the human organism is about 2,000 meters, somewhat more than 6,500 feet. All writers on climatology concur in the value of altitude, where the altitude is associated with the atmospheric conditions above described. The excellent gymnastics afforded the lungs are most valuable, as is well known to all observers. There can be no better, more simple, or effective form of natural physical exercise than walking; and if this be regularly pursued in a favorable climate, it will obviate the imaginary necessity for a portable gymnasium, which forms part of the outfit of most health seekers who go abroad.

It would be a work of supererogation for me to state anything in connection with so well an ascertained fact as the extreme curability of pulmonary tuberculosis in the incipient stage, when the patient is at once placed amidst favorable hygienic and climatic surroundings. All leading writers on tuberculosis are a unit to-day on this question. Laennec, of France; Williams, Sir J. Clark and Edward Smith, of England; Hughes Bennett, of Edinburgh; Von Zienssen, of Munich; Flint, Loomis, R. G. Curtain, Osler, Clinton, Wagner, and Senn, in our own country and dozens of other eminent writers and teachers, have expressed themselves in the most pronounced language upon this subject. Of no less importance, perhaps, is the widesprad and almost universal consensus of opinion with regard to the climatic conditions indicated in the treatment of the various forms of tuberculosis. All authorities concede the value of altitude, absence of moisture, the direct rays of the sun, together with an absence of high and sudden winds. All of these conditions are to be found in a nearly ideal state, and in varied degrees according to the given altitude and latitude throughout the spacious territory of New Mexico.

Better than words of mine, and more useful for the purpose in hand, is brief reference to the charts (these are taken at random and not selected) made at the United States Weather Observation Office at Santa Fe, New Mexico. Taking one year with another the average will be found to be about as follows:

Year.	Annual Mean.
1872	47.9
1873	48.3
1874	48.0
1875	47.5
1876	47.5
1877	47.6
1878	47.5
1879	50.2
1880	45.0
1881	lacking.
1882	"
1883	"
1884	"
1885	47.7
1886	47.6
1887	49.0
1888	48.4
1889	49.8
1890	50.4
1891	47.3
1892	49.1

The annual monthly values will show the distribution of temperature through the year:

Month.	Mean.
January	28.3
February	31.7
March	39.1
April	45.5
May	56.0
June	68.4
July	63.0
August	65.9
September	59.0
October	49.4
November	36.7
December	40.2

New Mexico lies in the region of the greatest dryness in the United States. The average relative humidity of the territory ranges from 29 to 43 per cent., according to locality. The average of Boston is 62.2 per cent.; at Buffalo, N. Y., 73.1 per cent.; and at Olympia, Washington, 79.2 per cent. The annual rainfall for the entire territory is approximately 10.2 inches. The incomparable climate of New Mexico is its chiefest glory. It is a land of sunshine, with skies of turquoise blue. Sunstrokes here are unknown, and one can ride all day over the beautiful mesas (table lands) with the thermometer at 100° F. or even more, and never suffer a moment from the heat. The atmosphere is so free from moisture that it absorbs little or no heat, so that, though the days may be warm, the nights, even in midsummer, are invariably delightfully cool and refreshing, while the absence of flies, mosquitoes, and other pests is noteworthy. In many parts of the territory are to be found grand cañons, lofty and picturesque mountain ranges heavily timbered, streams and rivers stocked with the choicest mountain trout, that have long since become famous among sportsmen. Extinct volcanoes, cliff dwellings, long since abandoned by a forgotten race, and relics everywhere of the early Spanish explorers, lend a mystic interest and enchantment to the student of archæology and history, although not so well advertised as some other portions of the country, notably California and Colorado. New Mexico is now receiving more and more the notice of climatologists on account of its preëminent sanitary and life-giving climate, so that I have no hesitation in predicting a great future for this territory—that it will one day become recognized as the sanitarium of the United States for tuberculosis and diseases of the respiratory system in general.

The altitude of Santa Fé is approximately 7,000 feet, that of Albuquerque 5,000 feet, while at Las Cruces, the southern extremity of the territory, it is 3,600 feet. We therefore see from the foregoing that within the geographical boundaries of this territory we have all the necessary climate and atmospheric elements requisite for the successful care and management of tuberculosis.

Cases of pulmonary tuberculosis, in the early stage of the disease, derive the greatest and most lasting benefit from a residence in this climate—the disease yielding promptly, and the patient becoming, in a short time, as nearly as it is possible for him to be, a sound and well man. In the second stage of the disease, also, pulmonary tuberculosis frequently subsides and remains quiescent for a long period of time, it being not an uncommon incident for a patient to ultimately die of some other disease. Cases of pulmonary tuberculosis in the third stage with serious laryngeal involvement, constant temperature, night sweats, diarrhœa, mixed infection, and profound anorexia, should never be sent from home, with the view of deriving any curative benefit from any climate. If such a patient or his friends insist upon a change, it should be distinctly borne in mind that no climate can help or save him; and that the best he can expect from a change is some relief or modification of the more aggravating symptoms of his disease, or, in other words, to make the act of dying easier for the sufferer. The attention of the medical profession throughout the United States has been attracted to this region with great force in the past few years, owing to the large percentage of recovery produced by the climate. Patients are being sent here in great numbers, and the results are more than fulfilling the expectations, so that the future of New Mexico as the sanitarium of this country for tuberculosis in all of its forms may be stated as an established fact, and its claim, I am certain, is based upon a firm and lasting foundation.—*Medical Dial.*

PNEUMONIA.

Walton advises the avoidance of exposure to other cases, confining of the patient to bed, avoiding all unnecessary exertion of any kind, the use of white flannel clothing, one or more daily spongings with tepid water and vinegar, and a diet consisting of milk, soups, lemonade, etc. In a robust patient at an early stage the lancet will sometimes cut short the disease, and a brisk purge and one or two large doses of quinin may be of value. The drug he most depends on is Norwood's tincture of veratrum viride, 2 to 4 minims every two hours or oftener, watching its effect on the pulse and bringing it down to 70 or 80 and holding it there. He has never seen any untoward effects and if the treatment fails to arrest the disease it makes it milder and more easy to manage. If it goes into the second stage give ammonium carbonate, 5 grains every two hours as a stimulant and absorbent. Strychnia is the best stimulant and tonic we have and should be used freely when indicated. Digitalis is of service when the pulse is weak and rapid. Transfusion of normal salt solution should be used in bad cases and opiates to relieve pain if necessary.—*Virginia Medical Semi-Monthly.*

SIGNIFICANCE OF THE STOOL IN INFANTILE DIARRHOEAS.*

By WM. E. DARNALL, A.B., M.D., Atlantic City, N. J.,

Visiting Physician to the Atlantic City Hospital; Fellow of the American Academy of Medicine; Member of the American Medical Association; and Vice-President of the Academy of Medicine of Atlantic City.

The most important feature in treating the summer complaints of infancy is a systematic and careful examination of the napkins day by day. Clinical symptoms furnish a general idea, but the stool is an actual index of the conditions present. Appearance, consistency and number of movements per day are to be considered. The verbal descriptions of an anxious mother are not to be depended upon. She will say yes to almost any direct question. Her lack of scientific training precludes her knowing anything about the details of consistency, color, particles of fat or casein, mucus, pus, necrosed epithelium, blood, etc.

Usually there is a history of the baby becoming cross, peevish, loses its appetite and vivacity, and vomits its food. The stools increase in frequency, are thinner in consistency, unnatural in appearance. Here is a condition of indigestion. The well-meaning mother every time it cries gives it more food. The difficulty is thus increased. The baby becomes worse. Movements become as thin as water, yellowish or muddy brown, offensive, perhaps accompanied with much flatus. They soon become colorless and watery. Weight is lost rapidly. The life of the little one leaks away literally through its bowels, unless this leaking is promptly controlled.

The dirty leaden colored stool is enough to tell the tale of infected masses of imperfectly digested food. Profound impression is made upon the nervous centres by the absorption of toxines from the bowel. The little patient wilts like a plucked flower, unless promptly cared for.

Most common perhaps is that terror of mothers, the green stool. Acid in reaction, accompanied with colic, it indicates too great a percentage of carbohydrates in the food. The passage resembles finely chopped masses of spinach or parsley, intermingled with proteids of undigested casein or fat. Most to be dreaded however is the watery movement, small in volume, and evidencing itself only by a small colorless watery movement, with here and there a small speck or mass of light pea green matter. It is little less dangerous than if it were so much arsenic. It is often seen in the latter stages of marasmus, when the natural secretions are so altered as to be unable to combat it, or prevent its return when the bowel has been rid of it.

The mucous stool.—Mucus is always present in feces. It is not visible when in abnormal quantities. When present therefore it indicates an inflammatory condition of some portion of the alimentary tract. If in the small intestine high up, it will probably be slightly bile stained. If in the colon or rectum it will be, as a rule, composed of white jelly-like masses of mucus, and attended with pain and tenesmus similar to the dysentery of adults. If it has continued any length of time, shreds of necrosed epithelium may be found sometimes coming away in perfect strings.

---

*Original abstract from paper read before Section on Diseases of Children of American Medical Association, held in Atlantic City, N. J., June 5-8, 1900.

Another not uncommon condition is seen in the whitish or grayish white stools of putty-like consistency. The appearance is often very much like cigar ashes. Fischer states these stools are composed largely of undigested fat. At any rate, there seems a total inactivity of liver function, since often no trace of bile is found in the excretions.

The constipated stool may be mentioned in passing. They are usually dry, pasty and dumpy, and the result mainly of an insufficient quantity of fat in the food.

Hygiene is too large a subject to be discussed here in detail, except to say, in passing, that it is of vital importance, and too much care cannot be given to bottles, nipples, napkins, bathing and dress.

Excluding constitutional diatheses, the treatment of the bowel conditions of infancy may be summed up in these words: (1), Elimination; (2), Disinfection; (3), Feeding; using always as few drugs as possible in the treatment of an infant.

Let it be remembered that the starting point of all these troubles is indigestion with retention and decomposition of food in the alimentary tract, which causes auto-intoxication by absorption of toxines from the bowel. The first step, therefore, is to stop all food for a day or two, using barley water or plain sterile water for its thirst. Then rid the bowel of all offending matter by drachm doses of equal parts of castor oil and aromatic syrup of rhubarb. Antiseptic action may then be obtained by tenths of calomel and quarter grain doses of salol, which may be combined with bismuth for its sedative action. If the stools are serous, grain doses of Dover's Powder after each loose movement should be used. For a condition of great relaxation, stimulation with small doses of brandy may be employed or morphine, gr. $\frac{1}{100}$, and atropine $\frac{1}{500}$ to $\frac{1}{800}$. In all conditions of abdominal pain, hot applications over the abdomen are of service. Should mucus be present, large doses of bismuth should be given and the addition of aromatic powder, or a little oil of anise, by their carminative action, helps to expel flatus. Simple medication is all that is necessary for most children. Some children, however, seem to resist all efforts and tax the attendant to the utmost for expedients. In such cases, a daily high irrigation of normal salt solution or warm water may be employed. It is of especial service in clearing out from the bowel mucus, foreign matter or any focus of infection, besides being soothing and comforting to the little sufferer.

The hardest question to settle, perhaps, in the management of a sick infant, is the adjustment of a suitable diet. None of the proprietary foods are quite satisfactory or efficient without the addition of fresh cow's milk, except for a short time. If they are to be used, only experience and good judgment in their selection can determine which food will suit the individual case. Often one food after another may have to be tried, until the whole gamut is run and the right one found. The most satisfactory as well as the most scientific way of meeting the difficulty is, beyond a doubt, in the modification of fresh cow's milk. It may be pasteurized to decrease the risk of infection. The sick baby should be started on a low percentage of proteids and fats, which may be gradually increased if the digestion can stand it. One-half to one per cent. of the proteids may be ordered for a child from six months to one year of age. In some cases, even with such a low percentage, it is necessary to peptonize the milk for the delicate stomach of the weakling. The proteids should be gradually increased by easy stages and the movements jealously watched for the presence of curds or masses of fat, and on their first appearance the percentage should be again decreased. While every one cannot afford, on account of the expense, to have the milk scientifically adjusted by the milk laboratories, yet any progressive physician who will take the trouble, can work out his own percentages and so instruct the mother that she may approximate them in the home modification of the milk. This becomes especially easy by means of the Estraus Materna introduced by Dr. Holt, which is a simple and convenient device within the reach of every one. It is an octagonal glass receptacle, holding sixteen ounces, and so graduated on its various sides that if the markings are followed six different sets of percentages of modification may be produced, and that suited for the case in hand selected.

The treatment of infants requires infinite care as to details and patience, while the closest scrutiny of its small body in all of its physical appearances, and an observation of its motions, facial expression, and even its cry is requisite. These are its only mode of expressing its sensations, and a correct interpretation of them often sheds light on a proper understanding of its condition.—*Virginia Medical Semi-Monthly.*

TREATMENT OF INFLUENZA.

Dr. Bartholow writes that his practice is to administer at the beginning of the local inflammation, one-sixth of a grain (adult dose) of one of the salts of pilocarpin. Pilocarpin sets up a brief stage of dryness immediately followed by increased secretion, and presently the mucous glands, the salivary and cutaneous sweat glands pour forth an abundant secretion. A sufficient dose of pilocarpin, administered at the right time, will often abort an acute catarrh or common cold. one dose should be given about two or three hours before retiring for the night so that the process of salivation and sweating is ended before sleep begins.

On the second day duboisin should be given, from 1-300 to 1-200 of a grain, for it is not desirable to induce its full physiologic effect. This quantity given once or twice in twenty-four hours will cause some dryness of the throat and nasal and faucial mucous membrane and slight dilatation of the pupil. It is important to maintain only a moderate degree of impression by duboisin; beyond that the result will be disagreeable without contributing anything to the curative action.—*Medical Summary.*

CANCER OF THE UTERUS AND ITS TREATMENT.

By R. STANSBURY SUTTON, M.D., LL.D., Pittsburg, Pa.

This paper consisted of a compact review of the anatomy, pathology, diagnosis and present method of treatment.

The author expressed the opinion that treatment for existing cancer of the uterus, had probably reached its complete evolution. In view of the ultimate results of this treatment, which he heartily endorses, because there is none other known to take its place, he asks the question, *cui bono?*

He then discusses the question of prophylaxis, he shows that the average age of his patients operated upon was forty-three years, and a fraction, and claims that if these patients had all been subjected to total vaginal extirpation at the average of forty years ,that all of them would have escaped cancer of the uterus. That according to his own statistics but four per cent. of the cases would have died. Whereas nearly one hundred per cent. of the cases did die within a period of two or three years after operations for cancer.

He urged greater attention to the early repair of lacerations of the cervix and a more painstaking observation and consideration by physicians at large of that train of symptoms preceding and leading up to the development of cancer of the uterus.

He unequivocally recommends radical surgical treatment in all such cases, and clearly announces that if we are to diminish the number of uterine cancer cases and consequent mortality in the future it must be done in fore-stalling the disease.—*Love, in Mirror.*

THE RELATION BETWEEN GALL STONES AND APPENDICITIS.

By DR. A. J. OCHSNER, Chicago.

The paper contains a table of twenty consecutive cases of gall stones operated upon by the author in Augustana Hospital, during the months of February, March, April and May, 1900. In each case the cæcum and appendix were brought into the wound and carefully examined. Of these twenty cases six suffered from chronic appendicitis. The appendix in each of these six cases was adherent and contained cicatricial constrictions; the lumen was obstructed to a considerable extent, the portion beyond the obstruction containing septic material in the form of fæcal concretions or pus or mucus.

This condition indicates that at some time all of these patients suffered from severe, acute appendicitis. It seems likely that either during the attack or later, during the time that followed, micro-organisms from this point of infection may have infected the gall bladder, or that the gall bladder may have been infected from the small intestine through the common duct as a result of the catarrhal condition of the intestinal tract which exists in connection with chronic appendicitis; or, that during the acute attack of appendicitis, when the entire intestinal tract above the ileocecal valve contains considerable quantities of septic material, this infection may have taken place.—*Medical Mirror.*

PROCEEDINGS OF NEW YORK ACADEMY OF MEDICINE.

Meeting Held November 1, 1900.

The President, William H. Thomson, M.D., in the Chair.

CYSTITIS AND BACTERIA.—Dr. William K. Otis read a paper on the etiology of cystitis. He said that it is now generally conceded that the cause of cystitis is some microbe. This was, in fact, one of the first diseases the microbic origin of which was demonstrated. Pasteur showed in 1858 that even in normal individuals the micrococcus ureæ might exist in the bladder and so alter the urine as to make it alkaline. He taught that this micro-organism might easily be introduced into the bladder from without and in 1864 suggested the sterilization of urethral instruments. In 1883 Guyon of Paris produced experimental cystitis by the injection of the micrococcus ureæ into the bladder. The microbe did not produce its pathological effect in the healthy bladder, but when congestion was brought on by tying the urethra of an animal cystitis always followed. At first this was thought to be the only microbe that caused cystitis, but soon many others were found to bear an etiological relation to the condition. Now it is known that there are some twenty microbes concerned in the causation of the disease. The most common of these is the bacterium coli commune.

CYSTITIS AND BACTERIUM COLI.—The exact relation which this micro-organism bears to cystitis is as yet unknown. It is well known that it occurs normally in the human intestine. It exists under many different forms and has at various times borne a number of different names. In 50 cases of cystitis it occurred 47 times. In 25 cases of cystitis it was found 23 times. It is evidently the most important of the causative bacteria, yet it is well known that its presence alone is not sufficient to set up an inflammation of the bladder. A number of cases of bacteriuria have been reported in recent years in which, though the bacterium coli commune occurred in large numbers in cloudy, offensive urine, practically no inflammatory symptoms existed in the bladder.

OTHER BACTERIA AND CYSTITIS.—After the bacterium coli commune the most important microbes in cystitis are the three forms of staphylococci, especially the staphylococcus aureus, the streptococcus, a bacillus septicus that is found occasionally, the gonococcus, and the tubercle bacillus. The gonococcus does not as a rule prove to be a virulent micro-organism for the bladder. When symptoms of cystitis occur during an attack of gonorrhœa it is because of secondary infection. The tubercle bacillus very seldom affects the bladder promarily.

AVENUE OF INFECTION.—The avenue by which infectious agents find their way into the bladder is not always easy to determine. The most frequent source is the urethra. They are either carried back on instruments, or they may occasionally find their way from the posterior urethra, or from a collection of pus behind a stricture. Oozing urine may prove a medium for the introduction of microbes into the bladder. When incontinence exists and the urine dribbles, drop by drop, the column of fluid is almost stationary in the urethra for some time. The bacterium coli may then find its way into the bladder, as it possesses good motility.

The neighborhood of the anus and the ease with which these germs might be carried by the hand to the meatus makes this method of infection not unlikely.

INFECTION FROM THE BLOOD.—An inflammatory process in any organ may give rise to metastases in the urinary tract. Usually the starting-point of such a metastatic condition is in the intestines. It has been proven experimentally that when a ligature is placed on the intestines of an animal, bacteria may get into the abdominal circulation and so find their way to the bladder. The bacterium coli commune is especially prone to do this. The infectious agent may come from an abscess in a neighboring organ, or may spread directly from the uterus or the rectum. It seems clear that bacteria occur not infrequently in the human circulation. They are eliminated by the kidneys and so find their way into the bladder, but usually without producing any inflammatory reaction. Some predisposition usually must exist before the bacteria can gain a foothold for their reproduction and development. The colon bacillus, especially, may find its way into the bladder without producing any cystitis. Guyon has had a patient who for thirty years has been passing the bacterium coli from his bladder, yet has not suffered from any vesical inflammation. Dr. Otis himself has had a case under observation for several years in which there is the offensive, stale odor so characteristic of the presence of the bacterium coli and in which these bacteria actually exist in very large numbers, yet there are no actual symptoms of cystitis.

Rovsing, an authority on cystitis, was so much struck by these facts that he considered the bacterium coli commune as a harmless inhabitant of the bladder, as it is in most cases of the intestines, and thinks that there is always some other micro-organism present which is the active agent in the production of the inflammatory symptoms. The luxuriant growth of the bacterium coli, he thinks, interferes with the demonstration of the presence of the other microbe. Tuberculous foci in either or both kidneys may exist for years and pour any number of tubercle bacilli into the bladder and yet no infection take place. The tuberculous process may spread from kidney to bladder by the ureter, or it may be the result of an abscess of the prostate rupturing into the bladder, or finding its way along the ducts to the urethra and thence into the bladder. The presence of a simple cystitis predisposes to tuberculous cystitis. It is only when the vital resistance of the bladder is thus diminished that infection takes place. The presence of a foreign body, the congestion and trauma incident to retention of urine, may easily predispose to almost any form of bacterial cystitis. Guyon has shown experimentally that artificial retention is the surest method of arousing cystitis if pathogenic microbes are present. Hence there is the greatest necessity for scrupulous asepsis in the treatment of retention of urine by instruments or otherwise.

GOUTY AND RHEUMATIC CYSTITIS.—It was the custom to refer a good many cases of cystitis to the underlying constitutional condition that exists in gout or rheumatism. It is doubtful if they ever more than predispose the organ to infection. Cold was supposed to be another prominent factor in the etiology of cystitis. There are times when exposure to cold seems to be the reason for an exacerbation of an already existing cystitis, but it probably never causes an attack of the affection by itself. There are, of course, certain mechanical conditions, as the presence of a foreign body or certain irritants, as cantharides, turpentine and the like, which may cause vesical inflammation.

PROPHYLAXIS.—The most important prophylactic measure is the thorough sterilization of instruments that are used in the urethra. Steel instruments, of course, can be readily and effectively cleaned by passing them through the flame of a Bunson burner. Soft rubber catheters can be absolutely sterilized by boiling. They should then be kept in a one-to-two-thousand solution of formalin or of sublimate until they are used. Silk and other catheters are not so easily cleansed. These should be washed well on the outside with warm soap-suds and on the inside by forcing a stream of suds through their caliber with a syringe. Guyon recommends dry heat and says that they can be effectually sterilized at 140° C. without producing any change in their texture. Boiling in plain water for five minutes has also been recommended. When this is done the catheters must each be wrapped separately in gauze, because if they lie in contact with one another adhesions take place during heating and the surfaces become roughened. Formalin vapor may also be used for the sterilization of these catheters and various apparatus are manufactured for this purpose. If formalin is employed the catheters should be washed out thoroughly after their exposure to the vapor, otherwise this substance will prove irritating to the urethra.

DIRECTIONS TO PATIENTS.—When patients are to use the catheter themselves they should be given the most explicit directions as to the care that must be exercised in keeping the catheters aseptic. It is impossible to insist too much on this point, for, no matter how intelligent patients may be, the use of the catheter becomes in time a routine and serious neglect of precautions ensues. Even physicians become careless and do not take the necessary care in this matter. Martin's directions are the best. They may seem to the inexperienced needlessly detailed, but those who realize how serious vesical infection may prove will consider them justified by the conditions. The patient should have twice as many catheters as he needs to use in the twenty-four hours, and on alternate days his catheters should be thoroughly subjected to some assured method of sterilization. There is no use in attempting to limit the number of catheterizations. As a rule, the urine must be removed from the bladder often enough to prevent an uncomfortable collection of the fluid and also to avoid congestion. The presence of large amounts of urine so lowers the vital resistance of the bladder-walls that infection very easily takes place.

LUBRICANTS.—A good lubricant is needed and should be in the form of some material that does not prove a ready culture medium for micro-organisms. The lubricant substance should also be soluble in water, otherwise a collection of material may cling to the bladder-walls. There is at least one case on record where a large amount of vaseline was found in the bladder as the result of its frequent and abundant use for the lubrication of catheters. Sterile glycerine possesses many of the qualities of a good lubricant, but is too thin. Lubrichondrin has been recently introduced to the profession and is in many ways an ideal lubricant. It is sterile and is sold in tubes which assures its cleanliness much better than if it were in some ordinary receptacle. After the passage of a catheter the bladder should be washed out with a one-to-two-thousand formalin solution, or a dilute solution of nitrate of silver should be injected into the bladder and allowed to remain for three or four minutes. After this the bladder should be washed out. Various internal remedies which act as antiseptics in the urine are in general use and will often be found of assistance in the treatment of vesical conditions. Of these salol, methylene blue and benzol are the best. Recently there has been introduced a new synthetic product, urotropin, wrich gives excellent satisfaction. In doses of seven ånd one-half grains given four times a day, this drug will often clear up cloudy urine that has resisted even the employment of vesical irrigation.

Predisposition Important.—In the discussion Dr. Edward L. Keyes said that bacteria are undoubtedly of importance in the production of cystitis, but some underlying condition of the system seems to be still more important in the etiology. He has frequently seen the condition known as bacteriuria, *i. e.,* hazy urine with a distinct mousy smell, accompanied by but very slight symptoms of vesical irritation. A few pus cells could be found in the urine, the haziness of it could not be thrown down by chemical reagents and the bacteria could be readily detected by culture methods. If the bacterium coli is pathogenic for cystitis it is evident that there are conditions under which it fails completely of its effect. Not only this, but under certain circumstances, even when the bladder reacts distinctly to the irritant present, the general system does not seem to suffer and the individual remains in reasonably good health. Dr. Keyes has under observation at the present time a man whom he saw first twenty-five years ago. At that time the urine was putrid and the man was living an absolute catheter life. After a course of irrigation the condition improved; then the patient neglected himself and the conditions became worse than ever. A few years ago he saw the man again and found that he complained very little of vesical symptoms. He was still passing the catheter faithfully every day and the instrument was a sight. The catheter was all blistered and reminded one of nothing so much as of a rat-tail file. The patient employed no lubricant. The instrument was kept in a drawer in his office, or in a washstand at home, and no precautions as to cleanliness were taken. Not long ago the man was placed on urotropin and since then his urine has been perfectly clear.

Bacterial Infection.—Of late years it is becoming recognized that the mere presence of pathogenic microbes is not enough to produce disease. It is the old question of the seed and the soil. Only when the soil is capable of nourishing the plant will the seed grow. Long ago in the Good Book it was said that some seeds fell on good ground. Soil is more important than seed. When the tissues are rendered less resistant by sexual excesses, or by long sexual restraint, the incident congestion decreases the vital resistance and so makes favorable soil for the implantation of bacteria. At such times instrumentation or trauma may easily give rise to cystitis. The relation which predisposition bears to infection has been beautifully demonstrated by some experiments of Albarran. He injected into the circulation of an animal certain bacteria that had been isolated from a case of septic nephritis. These bacteria failed to produce anything but a local reaction, though some of them were found in the urine. When one of the kidneys of the animal, however, was deliberately bruised at the time of the injection, the bacteria found a lodgment in the kidney and produced a purulent condition. The uninjured kidney remained normal, though the bacteria in the circulation had also been carried to it.

CATHETER LIFE.—At the beginning of catheter life patients are usually very sensitive to irritations of their urethra and bladder. Nature has not yet built up the protective mechanism which later so often effectually secures these patients against the effects of irritation and of infection. Even when all the details of asepsis are scrupulously put into practice, most patients will suffer from irritation and present hazy urine containing scattered leucocytes. Later many patients will be capable of standing almost anything in the way of urethral and bladder irritation.

INDIVIDUAL VULNERABILITY.—Dr. Bolton Bangs said that the occurrence of cystitis depends to a great extent on individual susceptibility. A patient of Dr. Bangs' suffered so severely from cystitis that it was thought necessary to put in a retention catheter. The patient had to get up to the commode and the catheter slipped into the vessel. It was taken out by the patient himself and after simple wiping reinserted. An acute exacerbation of the cystitis resulted, but the symptoms subsided in a few days. It is not an unusual thing to find that old men who are living a catheter life carry the instrument in their hats. Yet such men often live to eighty and then do not die because of their bladder affection. The simpler the directions given to patients for the cleansing of catheters the better. Boiling constitutes the best and easiest means of sterilization. The importance of a good sterile lubricant cannot be overestimated. Dr. Bangs considers lubrichondrin the best now to be had. It is extremely important to maintain the general health of patients who are living a catheter life.

CATHETER HATS.—Dr. Keyes said that it is a well-known fact that one of the prominent hatters on Broadway years ago made a special hat for old men in the bottom of which was a compartment in which a catheter could be placed.

FAILURE OF TOLERANCE.—Dr. Eugene Fuller said that the cases which grow so very tolerant to catheterization are the exception and not the rule. They come as such a surprise that they were apt to be remembered. Dr. Fuller considers that cystitis is very frequently the result of a mixed infection. The gonococcus alone, for instance, very seldom produces cystitis. When some other bacterium, also pathogenic in its effect, is present in the bladder at the same time, the two may cause serious inflammatory symptoms.

CLEANLINESS.—Dr. A. B. Johnson insisted that certain simple precautions as to cleanliness often prove of great service in preventing the occurrence of cystitis. Patients should not only be instructed to boil the instruments they use, but should be made to wash the hands carefully and to wash off the glans penis and the meatus very thoroughly before the insertion of the instrument. In addition to these instructions they should be provided with tubes of lubrichondrin. The most important thing after instrumentation is to wash out the bladder. Utzmann, of Vienna, took very few precautions with his instruments, in fact, always used the same sound even for successive patients without sterilization and yet never produced cystitis. He was very careful, however, to wash out the bladder thoroughly after the use of the instrument.

IRRIGATION OF URETHRA.—Dr. Valentine said that the urethra is constantly full of pathogenic germs. The danger of carrying these back into the bladder can be minimized by irrigation of the anterior urethra before the passage of the catheter into the bladder. If the irrigation is done with boric-acid solution and the urethra then filled with an iodoform-glycerine solution, there is very little danger of setting up inflammatory reaction either in the urethra or in the bladder. The importance of clean catheters is emphasized by the recent reports of five cases of vesical calculus, the nucleus of the stone in each case being a hair that was carried in on a catheter.

VULNERABILITY.—Dr. Jacobi said that the question of infection depends to a great extent on the vulnerability. This may vary from time to time even in the same individual. There are times when the bacterium coli becomes pathogenic even in the intestines. Normally, however, it exists there in millions without doing any harm. Why then should it not occasionally exist in the healthy bladder without producing cystitis? This would not preclude the possibility of its producing cystitis under more favorable conditions. The opportunity for this micro-organism to find its way into the bladder by direct contact is comparatively easy in the female, from the anus into the vagina. There is no doubt that at times broncho-pneumonia is caused by the bacterium coli which finds its way into the mouth and respiratory passages from soiled fingers. Ordinarily its presence does not produce any pathological conditions, but if catarrh of the respiratory passages already exists it may easily cause further pathological developments in the respiratory tracts. The same thing is true in the gall-bladder into which bacterium coli finds its way, but proves pathogenic only when the resistive vitality of the gall-bladder is lowered or the virulence of the micro-organism itself has been increased by some enteritic condition.

In closing the discussion Dr. Otis said that at the initiation of catheter life very great precautions should be insisted on. For several days beforehand urotropin should be administered in order to make the urine aseptic and unirritating. Just before catheter life is begun the patient should even be counseled to pass a day or two in bed until he becomes accustomed to the new conditions. Gentleness in the passage of instruments and cleanliness remain the most necessary imperative precautions.—*Med. News.*

THE ETIOLOGY OF CANCER.

The *British Medical Journal* for September 29 comments on the recently published report of a committee appointed in March, 1898, by the Birmingham and Midland counties' branch of the British Medical Association to inquire into the etiology of cancer, as follows:

"The committee is to be congratulated on having accumulated a substantial body of evidence derived mainly from the counties of Warwickshire and Staffordshire, but also from Shropshire and Worcestershire. It began its work by inviting certain medical men in the different registration areas of these countries to make lists from the official registers of all deaths certified as due to malignant disease during the previous ten years; and, in the second place, to give a detailed account of the physical conditions both of the localities in which the disease was more prevalent and of those in which it was less so, having particular regard to the dryness and sewage contamination of the soil and to the general conditions of those houses where malignant disease had occurred with marked frequency.

"For reasons connected with the fluctuating character of the population of large towns in respect of place of residence, statistics from them have been largely set aside. Returns have, however, been freely utilized from fifty registration areas representing a population of 860,000 persons, and including more than 5,300 cases of malignant disease. The conclusions arrived at by the committee are fully set forth and explained in the report, and they are obviously the collective result of a vast amount of labor. Taking the average mortality from malignant disease throughout the country as about 0.58 per cent. in ten years, they find that there are certain more or less well-defined areas in which the mortality is markedly higher than the average, and others in which it is much lower. They consider that these differences can be in only a very small degree attributed to influences of age and sex. For example, although the female cases largely exceed the male in point of absolute numbers, yet that is manifestly due to the very large number of uterine and mammary cases. If this and other sexual factors are excluded, then the case incidence is slightly in excess in the males. They have to acknowledge that the diagnoses tabulated in the register of deaths are by no means an infallible guide to the actual number of cases, but they are held to be useful as approximations. The undeniable discrepancies depend partly on the difficulty of diagnosis in the cases of internal disease and partly on the constant difficulty in the matter of necropsies. On the one hand, they consider that some of the cases recorded as cancer are not really such, indeed, they frankly admit, for example, that carcinomata and sarcomata cannot be distinguished from the registers alone, and on the other hand, they believe that many of the cases really due to cancer are not so recorded, and as a result that the death rate from carcinomatous disease is at present under-estimated.

"One of the main results of the investigation which certainly seems to be clearly established by the evidence, is that a damp, ill-drained, waterlogged soil is more frequently associated with a high cancer death-rate than is a dry, well-drained soil, and that contamination of the soil or subsoil for long periods with decomposing organic matter is a concomitant of, and probably bears a causal relation with, the specially high cancer mortality.

"Another of the more important results is that while second and third cases of cancer occur in particular houses with a somewhat greater degree of frequency than can be accounted for by mere coincidence, that, in fact, there may be 'cancer houses;' yet there is much greater weight of evidence, almost amounting to real proof, that cancer is found with extraordinary frequency in particular groups of houses, say in the same street, that is, they maintain it to be an ascertained fact, that there are 'cancer foci.' They suggest that this remarkable grouping may itself depend on an association with contaminated soil. A minor point, bearing in the same direction, is that cancer occurs more frequently in old than in new houses, and in districts inhabited for a long time than in those recently built over. Some evidence was obtained in the course of the investigations which suggests that under certain circumstances the disease may be transmitted direct from one person to another among those who are constantly in close association."—*N. Y. Med. Journal.*

Dr. I. N. Love, in a recent issue of the *Medical Mirror,* says:

The evidence has been rapidly accumulating for years in favor of the thought that early diagnosis and prompt surgical interference are essential to the safety of the patient in all cases of cancer. Superficial cases, epitheliomata that appear on exposed surfaces are apt to receive prompt attention from the family physician, but cancers in hidden recesses or cavities of the body are apt to be neglected; particularly is this the case in cancer of the womb. It is a deplorable fact that the majority of these cases are not brought to the attention of the surgeon until too late for surgery to be of any avail. This is not always the fault of the family doctor, for too often he is not consulted until the sloughing, discharges and pain clamor for relief.

The family adviser must know that it is his duty to educate the women under his care to a knowledge of the fact that all the leucorrhœas, catarrhal discharges and hemorrhages from the genitalia call for immediate attention.. If early investigation was made in all such sases, ulcerations might frequently be healed before advancing to the malignant state. Unless the family attendant has a skilled eye and an educated touch which can interpret promptly deviations from the line of health on the part of structures he should call in the specially trained gynecological expert.

Quite recently more emphasis is being placed on the importance of prompt recognition and correction of lacerations of the uterine cervix. In case of a tear in the lip of the mouth we would not long neglect to repair it and permit the salivary secretions and the many bacilli which infest the buccal cavity to dribble over and further irritate the inflamed part, but prompt repair would be instituted. Surely similar conditions call more loudly for attention when located in hidden and remote parts, where the environment is more favorable to unkind developments.

How many thousands of noble mothers have been neglected and permitted to die of cancer of the womb who might have been saved, may never be known. Every busy practitioner can recall scores of cases that have never been drawn to their attention until too late for interference.

Many women have from a false sense of modesty suffered for years in silence with a rapidly advancing malignant growth and never consulted a physician at all until driven to do so by horrible suffering or dangerous hæmorrhage.

Quite recently McMurtry (most eminent authority) has written forcibly in favor of uniform prompt surgical correction of all lacerations of the cervix on account of the peril to the life of the patient; the scars of the torn mucous membrane furnishing a focus for malignant development.

In *American Practitioner* and *News* for March, 1900, McMurtry says:

"As a prophylaxis in cancer more operations ought to be done for lacerations of the cervix. A woman between forty ,and fifty years of age, who has borne children, ought invariably to be examined, and, when the physician finds she has a laceration of the cervix, a deep ulceration in the neck of the uterus, it ought to be repaired. Here is the greatest field of usefulness there is, in connection with this disease. It is a very simple operation, it has no mortality, and it brings about a great deal of relief to the patient. All women who have the slightest disturbance of the menstrual function, or any hemorrhage from the uterus after the age of forty, ought to be very carefully examined with the view of finding an old laceration of the neck of the uterus, and, if such a condition be found, it ought to have immediate attention.

Sterile women and unmarried women who have never borne children do not, as a rule, have cancer of the uterus; multiparous women, who have borne a large family of children, are the ones especially prone to cancer of the uterus. The only way this can be explained is upon the hypothesis that there is some connection between laceration of the cervix and cancer; that there is something about the lacerated uterine neck which invites the morbid process." . . .

In conversation recently with some of the highest gynæcological authorities in America, Murphy, Reed, Palmer—Dudley, Morris, McMurtry, Baldy, Price and Henrotin, I elicited the uniform opinion that every lacerated cervix should be promptly repaired and whether corrected or not they should be watched carefully, examined from time to time and immediately on appearance of suspicious indurations radical surgical interference should be instituted. It goes without saying that a suspicious womb should be immediately removed. Authorities differ as to whether abdominal or vaginal hysterectomy is preferable, but if the conditions are favorable I prefer the latter.

Given a case of uterine epithelioma early discovered, promptly and radically operated upon and the chances are largely in favor of a long and useful life without recurrence.

Let it be remembered in uterine cancer as in all other diseases that prevention is better than cure, and that early diagnosis and prompt radical treatment are the only salvation. The profession and the public need to be awakened to a realization of the danger and their duty in the premises.

SELECTIONS.

Rapidly Progressive Anæmia.—H. W. Syers reports a rapidly fatal case in a woman of thirty-four years. The etiology is altogether obscure. The whole duration of the illness was exactly two months, and in this short period the patient passed from a condition of apparently vigorous health through rapid phases of increasing weakness, until death ended the scene. No remission, no arrest of symptoms occurred at any period of the malady, which was one swift descent to the fatal end. The author says that if we are ever to arrive at a real knowledge of the pathology of cases such as the one here recorded, it can only be by the methodical investigation of the blood in every case of disease. When this knowledge is acquired, we may perhaps be able to explain the occurrence of such peculiarities as apparent pericardial friction sounds, and the tendency to hæmorrhages, cutaneous and other, which so strongly characterize acute blood changes.—*Medical Record.*

The desirability of home modification of cow's milk is ably set forth by Dr. C. W. Townsend in the paper he read before the Obstetrical Society of Boston, April 16, 1900.

Amongst the various points to which he refers, he states that the addition of cereals to the milk is generally advisable, especially after the seventh month, and it is desirable before that age, in some cases, as an [illegible] to the digestibility of the milk.

The doctor might have mentioned in addition to this, that the necessary dilution of cow's milk by the ordinary methods employed reduces the proportion of lactalbumin below what is required for the infant. In making use of Eskay's Albuminized Food in modifying milk not only is the use of cereals possible for diluting the casein, but the egg-albumin present in the Food brings up the proportion of lactalbumin to what is required for the infant's perfect nutrition.

The directions for preparing Eskay's Food with cows' milk are so constructed that a mixture is obtained for the various ages of the child corresponding to the proportions of proteid matter, fat, sugar, carbohydrates, etc., that are needed at such ages.

Of no less importance is the fact that Eskay's Food is within the means of all classes.

Asthma.—Wells thinks that Asthma, above all other diseases, requires strict individualization in its treatment, and regard must be had for complications. He concludes that it has many points in common with migraine, angina and epilepsy, depending as they do upon the vaso-motor theory of pathology, especially when we consider the disturbance essentially a contraction, not a dilatation. Asthma occurs in reflex neuroses from diseases of various organs, but especially those controlled by the vagus nerve. The nasal trouble which frequently leads to asthma may not be an obstruction, and may be hard to detect. Nearly all cases show the preponderance of a psychical element, as is evidenced in the capriciousness of the disease, the curious exciting causes, and its dependence upon emotional states. In the treatment individualization must be observed. The best remedies are those which overcome arterial spasm, such as morphin, nitroglycerin, chloral and atropine. The treatment between the attacks must be directed to—first, removing the cause; second, of raising the constitution by instituting sound hygienic and constitutional measures. The constitutional treatment is best followed out by drugs having a direct action upon the arterioles, as iodide of potash, the other iodides, and piperazin, or tonics and alkalies.—*Interstate Medical Journal.*

The Parasitic Nature of Eczema.—P. G. Unna in making bacteriological studies of seventy-four cases of this disease was able to differentiate twenty-three types of coccus. These he arranges in five classes, according to their tendency to group formation. Those which do not show any such predilection, *i. e.*, the monads, form the first class, the dyads the second, tetrads the third, and octads and hekkaidekads the fourth and fifth. Of these twenty-three types twelve were found to give no results on inoculation into animals, four produced lesions somewhat impetiginous in nature but not at all resembling eczema, five types caused appearances strongly suspicious of the disease, and finally two gave all the characteristics typical of true eczema and are to be regarded as the producers of the disorder. One of these was found in over one-half of the cases examined and the other in only two instances, but then in pure culture. Carrying the investigation a step further and inoculating human beings it was found that absolutely typical eczematous lesions were produced by the two types under consideration. For these two the author proposes the names of Diclimactericus eczematis albus flavens and Monoclimactericus eczematis vivescens, while to a third strongly suspicious form he would apply the appellation Triclimactericus eczematis tenuis.—*Medical Record.*

LAS VEGAS HOT SPRINGS.

It happens that there is scarce another known climate so absolutely friendly to man and so valuable an ally against the innumerable forms of disease that lour upon him all the way from the cradle to the grave. Its equability at a comfortable temperature, its pure air, free from humidity and rarefied by altitude, and its almost unclouded sun, render New Mexico the most desirable resort in the word for those who are afflicted with any form of lung or throat disease and as such it is rapidly being adopted by the medical fraternity, not only in the United States, but in several countries abroad. It is a fact that New Mexico numbers among its energetic and prosperous citizens hundreds who, leaving their Eastern and Northern homes a few years ago with no better hope than to prolong by a few months a life apparently doomed to speedy termination by the scourge of our time—consumption—have there regained perfect health and the promise of a long and happy existence. And many others annually desert the harsher regions and repair to New Mexico at the approach of winter to preserve their lives. It is certain that consumption can be arrested, and even permanently cured, by residence there, if the change be made in time. And the climate that can not only withstand but conquer so terrible an adversary is a match, likewise, for a long array of other less formidable human ailments. Are you aware for how few localities in the whole world such a sweeping claim can be made without violation of the truth? Do you know that the complications of disease find some fatal flaw in nearly every variety of climate? Even New Mexico makes one exception in welcoming the sick. High altitudes are commonly regarded as aggravating to pronounced heart disease, and sufferers from that malady in an advanced stage are not advised to go there for relief; but every other class of invalid may confidently anticipate the most kindly treatment, for those ailments which the soft ministrations of climate alone cannot wholly obviate yield when such ministrations are supplemented by the medicinal virtues of the Springs, to specific mention of which at last we are come.

Half a dozen miles northwest from the old town of Las Vegas they bubble out of the hillside, some forty of them, varying in temperature from ice cold to boiling hot, but most of them ranging from 110° to 140° Fahrenheit.

How long their curative properties have been known to man it is idle to speculate, for the region has been peopled for many centuries, perhaps for thousands of years; but their fame among Mexicans and Indians led to the establishment there of a frontier United States army hospital nearly fifty years ago, while yet the northern and western bounds of Texas were the Arkansas River and the Rio Grande, and all west of the Rio Grande and south of Oregon was of Spanish dominion, and the wilderness had been penetrated by very few Anglo-Saxon race. Since that time numberless cases of nearly every form of disease susceptible of mitigation have been either entirely cured or greatly alleviated by the liberal use of these spring waters in drinking and bathing, aided by the health-restoring influences of the climate.

A combination of climate and mineral water exists at Las Vegas Hot Springs which will effectually rout almost any curable disease. The invalid who can sit in the sunshine and breathe that air; can drink that water and bathe in the flow of it, steam in the vapor of it, lie packed in the mud of it, and hold fast to his disease through it all, has never yet been met with. Even imaginary ailments give way before forces so potent for good.

No one who has taken a Turkish bath ever again flatters himself he is next door to godliness after a common ablution with soap and water; and just as the Turkish bath searches out and removes unsuspected external accumulations of foreign matter, so do repeated draughts of and baths in these hot medicated waters, piped directly from their hillside environment with almost no loss of temperature, wash the entire system free from its impurities and leave the body clean. A favorite bath here is administered by immersion in peat mud. It is recommended for disorders of the blood.

Is not that, then, a favored spot where healing waters gush forth in unstinted flow, amid surroundings which, even were there no medicinal fountains, would still be unrivalled in the possession of recuperative elements?

And when to these are added vistas of grass-grown meadows between the notches of hills set thick with pine and fir, watered by a stream that flows out from steep rocky walls into the winding courses beneath the shade of willow and alder and aspen and maple, idling here and there in transparent pools to have a word with the trout; cañons penetrating the mountain sides, overhung by precipices faced with tree and crag; lofty lookouts and deep secret dells, and far glimpses of purple-shadowed ranges knocking their head sagainst the distant sky; must not such a spot be worth going far to see and know?

Well, that is Las Vegas Hot Springs, only with a greater diversity of beauty and a subtler charm than so brief a description can convey. Nature did not design it for the sick alone, although for them she made particular provision. The tourist who desires a new sensation; the student of the ruins of antiquity; the dreamer who delights in mementos and suggestions of a romantic and irrecoverable past; the lover of nature who prizes imperishable memories of exalted scenic beauty; the sportsman, the devotee of the rod and gun; the man of business who seeks relief from harassing cares in a retirement at once secluded and invigorating; and the vast general public that appreciates the delights and benefits of an occasional sojourn in some favored spot where the climate is mild, the sunshine constant, and the air inspiring, and where rest, health and profitable pleasures are combined—these, equally with the invalid in quest of surroundings whose medicinal virtues shall restore his vanished health, are welcome guests.

PHENOCOLL IN MALARIA.

In the *American Gynecological and Obstetrical Journal*, Dr. Cesare Mondini, of Brooklyn, publishes a note relative to the value of phenocoll in malaria. The physiologic and therapeutic powers of the drug have been studied by Professors Mosso, Albertini, Cervello and Golgi. Upon the basis founded by these investigators Dr. Mondini has tried phenocoll in all the febrile conditions which he had diagnosticated as of malarial origin. The salt which he employed in all cases was the hydrochlorate. The doses prescribed varied from 1½ grams (nearly 24 grains) to 2 grams (about 30 grains) daily for children. The results were brilliant. Sometimes the amelioration was temporary, and in some cases the effects were negative. He had, however, made use of phenocoll in over a hundred cases and met with but few failures. These were due less to the action of the drug, he thinks, than to the manner in which it was used. Dr. Mondini appended brief memoranda of several typical cases treated by phenocoll, one in particular being that of a child, 5 years of age, who had suffered from malarial intoxication for a year and who had an enormous splenic tumor. He was rebellious to quinin, but was cured by phenocoll.—*Medical Bulletin.*

TREATMENT OF CONGESTION OF THE LIVER.

Monin (*Indépendence médicale*) gives the following formulæ:

1.	℞	Sod. bicarb.	
		Sod. sulph., āā	parts 6
		Sod. phos.	parts 4
		Sod. benzoate	parts 2
	M.	Sig. A teaspoonful in half a glass of warm water, to be taken daily.	
2.	℞	Powd. ignatia	
		Powd. squills, āā	gr. 1½
		Spartein sulph.	
		Amorph. quassia, āā	gr. ¾
		Theobromin	gr. 3¾
	M.	Sig. Two such cachets to be taken daily.	
3.	℞	Glycerin	parts 200
		Tinct. of boldo	parts 100
		Lactic acid	parts 15
	M.	Sig. A teaspoonful in half a glass of water, to be taken after each meal.—*N. Y. Med. Jour.*	

PALATABLE QUININE MIXTURE FOR CHILDREN.

Dr. W. J. Greanelle gives the details for the preparation of such a mixture which will be readily taken by children. It is designed as a tonic and malarial prophylactic for children living in malarious sections. It will serve for active medication in acute cases of malarial disease of three years or younger by giving the dose at hourly intervals:

℞	Quininæ hydrochlor	gr. v-x
	Alcoholis	ʒi
℞	Ol. Cinnamomi	
	Ol. anisi āā	m. xxx-xl
	Magnesiæ, q. s.	
	Aquæ	℥i
M.	Let stand for some hours; filter.	
Mix one and two and add:		
	Syr. simp	℥iii
	Carmin or cochineal sol	m. v
	Sig. One or two drams as directed.	

Saccharin in small quantity helps to disguise the larger dose of quinin. Fowler's solution may be added if indicated, or sodium bromid for children made irritable by quinin.—*Medical Seminary.*

GAILLARD'S MEDICAL JOURNAL.

A MONTHLY JOURNAL OF MEDICINE AND SURGERY

Scientia et Veritas Sine Timore.

PUBLISHED BY THE NEW YORK MEDICAL PUBLISHING CO.,

116 Nassau Street, NEW YORK.

All communications, of either business or editorial character, should be addressed to Gaillard's Medical Journal, 116 Nassau St., New York.

Articles for publication will be received with the understanding that they are contributed exclusively to this journal. Reprints will be furnished at actual cost, orders for which should accompany the manuscript. Authors of accepted articles may receive twelve copies of the issue in which they are published. Necessary illustrations will be furnished without expense to authors when suitable drawings or photographs are furnished.

EDITORIAL.

The Value of Sunshine.

As time passes we are learning more of the great value of sunshine as related to health. Volumes could be written evidencing its beneficial effects in developing robustness of physique.

Outdoor life in the sun is helpful not only from the fact that the sun's rays are remedial, but pure air is the best eliminator and invigorator we have. The sunshine wards in hospitals invariably give convincing arguments in favor of the sun as a therapeutic agent.

Sun baths should be given daily to all convalescents and those suffering from chronic illness.

It is well to state that every home built in an ideal way should have a large, handsome room in the top of the house which can be flooded with sunshine at pleasure, to be used always as the sick room. So, too, every such house should be built with a roof garden. No longer should the advantages of such a feature in a residence be ignored.

The greatest desideratum in selecting a climate for the victim of tuberculosis is that there should be a maximum of sunny days, such as New Mexico and Arizona.

But we need not go to distant points to secure the benefits of sunshine, for it is all around us most of the time.

We realize more and more the importance of letting sunshine into our homes and into our lives.

Dr. Carl Gerson, of Berlin, furnishes a contribution to the therapy of concentrated sunbeams in the *Arch. fur Lichtherapy*, Bd. I. H. 3, 1899, in which he states that he proceeded from the conviction that the simultaneous influence on the skin of all the light rays, as nature acts through the sun, being the most rational process, he turned to account not only the blue rays alone, but all the rays of the sun.

In order to strengthen the effect, he uses a collecting lens, nine and one-half centimeters (three and three-fourths inches) in diameter and of corresponding thickness, when he has to treat skin diseases, and holds that lens at such a distance that the contact of the bundle of rays calls forth on the skin a strong sensation of warmth within the illuminated circle. As it is necessary to have the said circle under constant control, the author suggests wearing protecting spectacles of smoked glass, or else blue-colored glass.

The first experiment made on himself was in treating a septic ulcer caused by the infectious sting of some insect. The ulcer was situated over his right wrist, and reacted very little to hydrotherapeutic compresses and disinfecting salves. Then Dr. Gerson thought his case would be an appropriate one to try light-therapy. In consequence, he treated the ulcer, continuing compresses and salves, every day for fifteen minutes with concentrated sunbeams. After each sitting he could ascertain a diminution of the secretion of pus, a notable subsiding or leveling of the edges of the ulcer and a diminution of the inflammatory edema. The painful tension and the fever subsided. After eight sittings, the fundus of the ulcer was clean and covered with sound granulation, filling up in a few days the whole cavity, and the covering of the skin set in from the edges.

After this favorable experience, Dr. Gerson has frequently made use, in his polyclinic, of this mode of treatment in eczema, herpes, tonsurans, impetigo, contagiosa, ulcuscrusis, etc., and obtained good results.

Apes Not Our Ancestors.

It will interest all to know that recently evidence has been presented indicating that we are in no manner related to the monkey, the ape or the ourang-outang. The *Record* quotes dispatches to the *Sun* from Berlin to the effect that at the recent congress of German anthropologists at Halle, Professor Klaatsch, of Heidelberg, read a paper contending that the direct descent of man from apes was no longer maintainable. His conclusion was based on the construction of the biceps muscle of the thigh. He contended that it was a mistake to regard man as the most perfectly developed mammal in all respects. His limbs and teeth do not show any high degree of development, and he is superior to other animals only in his extraordinary brain development.

We trust that this announcement of Professor Klaatsch will be accepted as final, Darwin to the contrary notwithstanding, for manly dignity and pride of family has been much disturbed by the thought that after all we all came from the same original protoplasm. The boastful and arrogant alleged aristocrat, with blood as blue as the policeman's coat and pride as stiff and sometimes cruel as the peeler's club (the best part of whom, like the potato plant, is underground), can now breathe easier, even though he cannot escape the sorrowful fact that dear old Father Adam and his knowledge-seeking spouse were sponsors for us all; and God knows the responsibility is an awful one.

Third Pan-American Medical Congress.

It will interest the medical profession of the United States to know that the third Pan-American Medical Congress will be held at Havana, Cuba, on December 26th, 27th, 28th and 29th, 1900.

There will be three general sessions. At the opening session in the Marti Theatre there will be present, besides the congressists, members of various scientific bodies and other invited guests. The report of the secretary-general will be read, and there will follow an address of welcome by the president of the congress. There will also be an address by Governor Wood, and two scientific addresses. At the second general session there will be four scinetific addresses, one by a Cuban physician. At the closing session the report of the treasurer will be read, one scientific address will be presented, brief remarks will be made by the representatives of several countries, and the secretary-general will announce the place chosen for holding the fourth congress. The section meetings will be held daily from 8 to 11 A. M. and from 3 to 5 P.M. The dues for members of the congress will be $10 in gold. Each member who purposes reading a paper is requested to send to the secretary an abstract, not exceeding three hundred words, not later than November 15. It is thought that about one thousand physicians will attend. Three hundred of the delegates will be Cubans. A large number will come from Mexico, traveling on a Mexican warship. Many American physicians are expected. The executive committee consists of Dr. Juán Santos Fernandez, president; Gustavo Lopez, vice-president; Tomàs V. Coronado, secretary; Enrique Acosta, treasurer; and Vicente K. Valdés, José I. Torralbas, and Edwardo F. Pla. The address of the secretary is Prado, 105, Havana, Cuba.

EDITORIAL NOTES AND COMMENT.

It must not be forgotten that to Dr. J. Leonard Corning, of New York, belongs the credit of originating and demonstrating the utility of spinal norcosis—the injection of a solution of cocaine into the spinal canal for the securement of complete anaesthesia of all tissues below the diaphragm.

* * *

In these modern days too little attention is given to the study of temperament and diathesis. In the multiplication of specialties and the scattering of our medical forces in the way of knowledge of heredity temperament and susceptibility is being made.

We had better "right about face," and take up these important questions where we left off.

* * *

The question of corporal punishment in schools, says the *Medical Record*, has been much discussed lately in Germany and Switzerland, and the Canton Berne has come to a decision in the matter. *The Electrical World* considers the new law a compromise between the flagellants and anti-flagellants. It prescribes the use of the cane for "grave faults," such as indicate moral perversion; repeated lying is given as an instance, and it is expressly forbidden to punish for want of application. Girls are not to be punished physically at all.

It is to be hoped that the discussion may result in the total abolition of corporal punishment both in the school and the home.

Under proper management the rule of love, kindness and appeals to self-respect is better than the rod after a child is three years old.

BOOK REVIEWS.

Rhinology, Laryngology and Otology, and their Significance in General Medicine. By E. P. Friedrich, M.D., Privatdocent at the University of Leipzig. Authorized translation from the German. Edited by H. Holbrook Curtis, M.D., Consulting Surgeon to the New York Nose and Throat Hospital and to the Diphtheria and Scarlet Fever Hospitals. Cloth, $2.50 net. W. B. Saunders & Co., Philadelphia and London.

In his preface, which, it may be said at the outset, is as modest in its promise as the rest of the book is brilliant in achievement, the author says: "A specialty should not be regarded as a thing, a part, and a kind of appendage; it should take an active part in all the problems with the solution of which general medicine is concerned. To do this an active co-operation between general medicine and every one of the various specialties is indispensable. Whenever it is lacking, the specialty is in danger of becoming a mere source of revenue and of losing its scientific significance; while on the other hand the general practitioner will fail to recognize special symptoms which might have been of the greatest importance to him in the recognition and treatment of his cases."

The book cannot fail to demand the attention of the specialist, but we feel that it will receive, as it deserves, a wider audience.

It is divided into the following sections: Diseases of the Respiratory Organs; of the Circulatory System; of the Digestive System; of the Blood; Chronic Constitutional Diseases; Acute Infectious Diseases; Chronic Infectious Diseases; Diseases of the Kidneys; Diseases of the Skin and Sexual Organs; Diseases of the Eye; Intoxications; Nervous Diseases and an Appendix.

The author does not consider diseases of the ear, nose and throat *per se*, neither does he discuss the symptomotology and pathology of other diseases. The book is devoted to the consideration of the occurrence of disturbances of function and pathological changes in the ear and upper respiratory tract in connection with the more or less remote diseases named in each section.

The volume is a most instructive one, and on every page there is at least one thing to rivet the attention and interest. The sections upon The Digestive System, The Acute Infectious Diseases, and the Diseases of the Nervous System are especially full and interesting.

We wish to emphasize in this review the utility of the book to the general practitioner, and cannot forbear quoting a little from the section upon the diseases of the digestive system in illustration.

The author says: "Hartmann repeatedly pointed out the significance of purulent otitis media in the nutritive disturbances of infants . . . . and Goeppert showed that purulent otitis media is often a sequel of intestinal diseases in infants, which up to that time had been practically disregarded. We have already seen that the interdependence of lung and ear diseases had been known and studied for some time, and now Goeppert finds that the percentage of ear complications is much higher among children suffering from intestinal troubles than it is among those admitted for other diseases; 12 per cent. of the former and 39 per cent. of the latter class were found to have healthy ears. . . . Secondary nutritive disturbances play an important role in *primary* ear diseases in the case of infants. A regular digestion and a uniform increase in the body weight afford the best criterion of an infant's health, for its digestive organs are so sensitive that the slightest local or general disturbance may suffice to upset its stomach. If there be a purulent focus anywhere in the body, auto-infection will be much more likely to result from the absorption of the products of metabolism, in the infant, than in the adult, and will show itself chiefly in the organs which are functionally the most important; that is, it will be followed by indigestion and a falling off in weight. Thus there is danger of auto-infection whenever the secretions are retained in the middle ear in purulent otitis media, because there is no perforation, or only an insufficient one, in the tympanic membrane; for the toxins contained in the pus are distributed throughout the body, and set up an enteritis, with its train of evil consequences."

Hartmann investigated this condition in the *Berliner Kinderklinik* and found that purulent otitis media and intestinal catarrh react on each other so distinctly that paracentesis and evacuation of the secretion may be followed by return of the disturbed digestive function to the normal. and an increase in weight instead of a loss. In one case of acute otitis media, when a second rise of temperature clearly indicated paracentisis, the intestinal condition presented a perfect reflection of the state of the suppurative process. On two other occasions retention of the pus was followed by indigestion and a loss of weight, but both conditions immediately began to improve after paracentesis had been performed. . . . Hartmann rightly concludes from his observations that in all intestinal diseases of infants accompanied by rise in temperature and loss of weight, the ears should be examined to ascertain whether any inflammation is present.

The above somewhat extended quotation, for which we think no apology necessary, will show better than any words of criticism the quality of the book.

By far the greater number of men in the active practice of medicine are what is called general practitioners, and it is upon the advancement of this body of men in knowledge and power that the progress of medicine must ultimately depend. The man who forms his opinion of his patient's condition from his story, and who rarely or never makes a physical examination of any sort, is with us still. He still prescribes for anal fissure under the impression that he is treating piles. He still sends patients to the oculist to have a diagnosis of chronic nephritis made. He still treats malpositions of the uterus with medicine by the mouth. But the number of the men who make a careful and thorough examination of each case before arriving at a diagnosis or proceeding to treatment is, we think, growing larger every day.

It is to such men, who in general practice are yet studious and progressive, that Dr. Friedrich's book will particularly appeal.

DISEASES OF WOMEN. A Treatise on the Principles and Practice of Gynecology, for students and practitioners. By E. C. Dudley, M.D., Professor of Gynecology, Northwestern University Medical School, Gynecologist to St. Luke's Hospital, Chicago, Ill. Second Edition, revised and enlarged, with 453 illustrations, of which 47 are in colors and 8 full-page plates in colors and monochrome. Lea Bros. & Co., Philadelphia and New York.

The appearance of a second edition of this American classic on Gynecology affords the most conclusive evidence of the fact referred to in a review of the first edition, that this is a book for the practitioner who finds in its pages counsel and aid in the most perplexing cases.

The virility and force which were striking characteristics of the first edition, mark every chapter of the second. The author appears to have sought out and discovered deficiencies, which have escaped the reviewer. In his peculiarly vigorous style and manner he has rearranged parts, changed chapters and added so much new matter that we are presented with a work of which American medicine may be justly proud. It is difficult to select individual subjects for illustration of the statement.

The twenty-four pages devoted to antisepsis and asepsis form a clear exposition of this most important subject; there is not a superfluous word or sentence in it; every detail has received attention. In western parlance, "It's all meat." In this day, when the iodine brush, the glycerine tampon and the pessary no longer constitute the chief resort of the gynecologist, but when most remediable utero-ovarian diseases are treated successfully by operative measures, antisepsis and asepsis necessarily form the foundation of gynecological therapy. The author has doubtless realized this idea and has opened the work with this chapter, after dwelling briefly upon the physiology of the pelvic organs.

In order to present to the reader a correct idea of the practical nature of this book, chapter 5, on local treatment, may be cited. The hot vaginal douche, that much abused remedial agent, as ordered by the average physician, proves a delusion and a snare. The author tells us that "the choice of the syringe, the frequency of the douche, the time and length of its application, the temperature of the water, the proper use of the bedpan, the position of the patient, and long persistence in the treatment, are all essential to good results." Then he goes on to describe in parallel columns the "ordinary method of application" and the "proper method of application." With the same intensely practical spirit every subject is treated. The author's standpoint on topical treatment—once the universal remedy—marks him as a practically progressive man. Few latter-day gynecologists will fail to agree that "a reproach will be lifted from the medical profession when the indiscriminate use of topical treatment shall have been relegated to the dark ages of gynecology."

The general practitioner who looks for the treatment of such conditions as leucorrhœa, catarrh of the uterus, etc., will fail to find this information in the index. Such conditions are properly placed among the manifestations of various diseases—endometritis, etc. Too long have they been regarded as diseases which require to be attacked by the most violent astringents and caustics and which happily the author condemns with just indignation.

The illustrations in this book are marvels of art and indicate that the author himself has artistic capacity, or at least propensity. We would call special attention to the colored illustrations of displacement of the uterus and the colored plate on page 359 showing beautifully the "vascular supply of the uterus and its appendages."

It is but just to the author and publisher to say that they have produced the finest recent work on gynecology—a work which must redound to the credit not alone of American gynecology, but American medical literature.

The inviting pages of this book present a fascinating review of the whole subject; in them the general practitioner and specialist alike will find comfort and satisfaction.

MANUAL OF THE DISEASES OF THE EYE. For Students and General Practitioners, with 243 original illustrations, including 12 colored plates. By Charles H. May, M.D., Chief of Clinic and Instructor in Ophthalmology, Eye Department College of Physicians and Surgeons, New York. William Wood & Co., New York.

Dr. May has given us a most attractive little manual of the diseases of the eye. The book is intended for the student and general practitioner, and is adapted for teaching purposes throughout. It begins at the beginning of its subject with a clear and full statement of the methods of examination of the eye, and proceeds to take up in order the diseases of the visual apparatus classified anatomically, as is usual. Following this part of the book are chapters devoted to the consideration of the eye as an optical apparatus, after which, errors of refraction, anomalies of accommodation and disturbances of mobility are considered. A short chapter upon ocular therapeutics and operations on the eye and a most complete index close the book.

The book is most copiously illustrated, all the pictures except those of instruments being original, and a number of colored plates of the ophthalmoscopic appearance of the fundus in health and disease add considerably to the value as well as to the appearance of the book.

It seems to us that even in a year that has been most prolific in its output of admirable medical books, this modest little manual should find a warm welcome. To the student, and perhaps we may be permitted to say, to the average practitioner, the diagnosis and management of diseases of the eye is an unfamiliar subject, an anxiety and a bugbear.

There are larger treatises and other manuals, but none that we know of that combines in itself so well the three cardinal virtues of a manual—clarity, brevity, and discriminating amplitude within its scope.

A Practical Treatise on Genito-Urinary and Venereal Diseases and Syphilis. By Robert A. Taylor, A.M., M.D., Clinical Professor of Venereal Diseases at the College of Physicians and Surgeons, New York; Surgeon to Bellevue Hospital, and Consulting Surgeon to City (Charity) Hospital, New York. Second Edition, thoroughly revised, with 138 illustrations and 27 plates in colors and monochrome. Pp. 720; cloth, $5.00 net; leather, $6.00 net. Lea Brothers & Co., New York and Philadelphia, 1900.

This, the second edition of Dr. Taylor's well-known work on the pathology and treatment of venereal diseases, is practically a new book. The author in addition to revision and emendation all along the lines covered has also considered genito-urinary diseases, which, it will be noted, much increases its scope.

The book is one that, while it will particularly attract the specialist, is yet rather adapted for the uses of the general practitioner called upon to do genito-urinary and venereal work. It is not, as its author explains, an encyclopedia, and yet it fully, carefully and faithfully covers its ground. Throughout the book the discussions of pathology and symptomatology are exhaustive, the indications for treatment are clearly set down and conservatism is the rule. Where surgical procedures are advocated they are described.

Dr. Taylor's style in writing, as in the lecture room, is genial but emphatic. His protest against "rapid transit" methods of treatment in gonorrhea, his discussion of prostatic hypertrophy and his scholarly chapter on the treatment of syphilis deserve particular mention.

The illustrations have been prepared under the author's personal supervision. The 27 magnificent photo-plates are a great addition to the book.

We have also received:

Progressive Medicine. A Quarterly Digest of Advances, Discoveries and Improvements in the Medical and Surgical Sciences. Edited by Hobart Amory Hare, M.D., assisted by Charles Adams Holder, M.D., assistant demonstrator of Therapeutics, Jefferson Medical College. Vol. iii, Diseases of the Thorax and its Viscera, including the Heart, Lungs and Blood Vessels; Diseases of the Skin, Diseases of the Nervous System, Obstetrics. Pp. 400. Price, $2.50 net. Lea Brothers & Co., Philadelphia and New York.

A Text Book Upon the Pathogenic Bacteria for Students of Medicine and Physicians. By Joseph McFarland, M.D., Professor of Pathology in the Medico-Chirurgical College, Philadelphia, etc. Third Edition, revised and enlarged. Pp. 600. Illustrations 142. Cloth, $3.25 net. W. B. Saunders & Co., 1900. Philadelphia and London.

A Manual of Syphilis and the Venereal Diseases. By James Nevins Hyde, A.M., M.D., Professor of Skin, Genito-Urinary and Venereal Diseases, Rush Medical College, Chicago, etc.; and Frank Hugh Montgomery, M.D., Associate Professor of Skin, Genito-Urinary and Venereal Diseases, Rush Medical College, Chicago, etc. Second Edition, revised and enlarged. Pp. 580; 58 illustrations in the text and 19 full-page lithograph plates. Cloth, $4.00, net. W. B. Saunders & Co., 1900, Philadelphia and London.

A Text Book of the Diseases of Women. By Henry J. Garrigues, A.M., M.D., Gynecologist to St. Mark's Hospital in New York City, Gynecologist to the German Dispensary in the City of New York, etc.; with 367 illustrations. Pp. 750. Third Edition, thoroughly revised. Cloth, $4.50, net; sheep or one-half morocco, $5.50, net. W. B. Saunders & Co., 1900, Philadelphia and London.

GAILLARD'S MEDICAL JOURNAL.

VOL. LXXIII. NEW YORK, DECEMBER, 1900. No. 6.

REPORT OF THE COMMITTEE ON TUBERCULOSIS.*

At the Columbus meeting of the American Medical Association, June 6-9, 1899, the following resolutions were adopted:

Resolved, That the president appoint a committee of five with power to add to that number, who shall prepare a report on the nature of tuberculosis; its communicability and prevention; the more effectual means of controlling the spread of infection and of educating the people in personal hygiene, so as to lessen the chances of their becoming tuberculous and to increase the prospects of their recovery; the advisability of establishing national and state sanitoria, and such other matters as may be pertinent to the subject.

Resolved, That this committee shall present this report to the Congress of the United States and to the legislatures of the various states of the Union and urge upon them that appropriate measures be speedily taken.

To the President and Members of the American Medical Association:

GENTLEMEN:—Your Committee on Tuberculosis, appointed in pursuance of a resolution of the meeting of 1899, was instructed to report on the general subject of tuberculosis, as to: 1, its nature; 2, its communicability; 3, its prevention; 4, the control of the spread of the disease and the education of the people so as to lessen their chances of infection and their prospect of recovery when infected; and, 5, on the advisability of national and state sanatoria.

In presenting this preliminary report your committee finds it unnecessary to deal at any great length with the first two sections of the subject assigned.

1. Tuberculosis is a disease of many tissues of the body, due to the growth therein of the tubercle bacillus, which finds for some reason a favoring culture field in the organs. Granular minute bodies, known as tubercles, are produced, whose tendency is to necrosis and the setting up of the process of suppuration. Poisoning of the system in varying degrees results from both of these processes, and important organs and functions are interfered with and so death follows in a large proportion of cases.

The exact mortality of tuberculosis cannot be stated, for all the cases cannot be counted, since many are undiagnosed and many are suppressed; but in this country it probably amounts, in towns, to not far from

---

* Jnl. Am. Med. Assn.

14 per cent. of all deaths, and it is easily demonstrated that the pulmonary form reaches 9 to 11 per cent. of all deaths. In the country, as a whole, the mortality from all forms of tuberculosis is probably considerably below 14 per cent.; possibly not over 12 per cent. In upward of forty towns and cities of the United States, which for the year 1897 reported their deaths from consumption, the mortality from his disease was 10.9 per cent. of the total mortality. Tuberculosis kills thirty times as many as die from smallpox and scarlet fever together, and four and a half times as many as from these two diseases with typhoid fever and diphtheria combined. The figures thus show that this is the most destructive disease extant. It is, moreover, the one least subject to fluctuation; the most constant from year to year. Domestic animals furnishing the food of man are afflicted with it, and bacilli are found in the milk and butter derived from them. It is intertransmissible with them.

It is difficult to state the morbidity of human tuberculosis. Pathologists give varying figures, as based on post-mortem examinations, of 40 to 75 per cent. of all people as being afflicted with it in some portion of their bodies some time in their lives. Probably a fairer figure would be 50 per cent.

2. Tuberculosis is a communicable disease; it is carried from person to person as a specific bacterium which enters the body and thrives variously or dies, depending on the personal susceptibility of the individual. This varies in different bodies and in the same body from time to time, and is increased by ill-health, unhygienic conditions of life, starvation and overwork, and by hereditary predisposition. It is decreased by bodily vigor, outdoor life, good hygiene and perfect physiological functions.

Tubercle bacilli are very prevalent in the atmosphere of cities and towns, and not all people who imbibe them take tuberculosis, but only those with a power of resistance that is too low either to destroy them or to render them innocuous.

The bacilli are acquired mainly through the air, which carries them directly into the mouth, nasal passages, throat, trachea and lungs. Bacilli taken into the mouth and throat are mostly swallowed, and, if not destroyed by the acids of the stomach, pass into the intestines, sometimes to set up tuberculosis there. The microbes are doubtless often swallowed in milk, and are carried to the mouth by polluted utensils, by things chewed, and possibly by the kiss of infected persons. Some bacilli find their way into the lymphatics and blood-vessels, and so are disseminated through the system, possibly to start foci of disease in distant parts of the body.

3. As to prevention a larger word is to be said. Complete suppression of the disease is too much to hope for, but it is possible to limit to some degree the spread of it, and the necessary measures should engage the most earnest and sustained attention, and have the insistent support of every member of the medical profession. The first step to the accomplishment of this end is to reduce the number of tubercle bacilli in the air we breathe. The disease is largely air-borne, and our duty is obvious. The following are practical measures: *a*. Destruction as far as possible of all tuberculous sputum, either by fire or by chemical agents in spit

receptacles. *b*. Careful disinfection of contaminated clothing, utensils and rooms—clothing and utensils by heat, either dry or moist, and rooms by formalin. *c*. Careful management of the patient in his person, and especially as to his expectoration. *d*. The segregation of infected persons, in whom the disease is active, under the care of nurses competent to prevent them from contaminating the atmosphere.

The next step is to protect foodstuffs, especially milk and meat, from contamination. This necessitates the careful and constant inspection of dairy herds, the creation and enforcement of wholesome rules of management, and the destruction of all seriously sick cattle.

Then the people, especially those known to be predisposed to the disease, need to be kept constantly in a condition of robust, not to say athletic, vigor. Any drop from this standard is dangerous. Comparative freedom from contact with the bacilli is the greatest desideratum; it is only less important, as people can never be wholly free from them, that they should have the greatest power to resist their multiplication in the body. The largest influences to this end are a life much in the open air and perpetual freedom from every excess in any possible direction.

4. How can the people be educated to prevent the spread of tuberculosis, and when infected how can they have larger hope of recovery?

The lessons on this point should be as few as possible, so as to avoid confusion and the scattering of public attention. They should be consistent, and contain nothing unnecessary. A few cardinal doctrines ground into public thought will be more effective than a hundred casual details. They should carefully avoid unproved theories and impracticable measures; nothing blights a good reform movement so surely as these. They should be such, and only such, as will command the unanimous approval of the profession, so that there shall be no confusion of tongues or advice. They should be limited, in the burdens they impose on the public, to such measures as will appeal to its common sense, and not provoke antagonisms or unnecessary hardships. These are cardinal truths: *a*. We must enlighten the people as to the nature of tuberculosis and the method of its distribution. *b*. The urgent sick should, if convenient, be segregated somewhat from the well, and be sent to sanatoria if possible. If they live with their families they should know and obey the rules of proper personal care and conduct. The practice of keeping consumptives ignorant of the nature of their disease, when they are expectorating billions of bacilli every day, is a crime against the community. They are usually less shocked by the truth than their friends are, and knowing it, they are more ready to join in measures for their own good and for the protection of others. *c*. All spitting on floors, sidewalks and public conveyances must be discouraged and forbidden by law. Expectoration should be received into articles that can be burned or disinfected, and its destruction should be insisted upon. Long exposure to sunshine kills the bacilli, but when infected sputum is cast out upon the ground the possibility is great—except in regions of the most intense sunshine—that before it is rendered harmless it will become to some degree part of the dust of the air, to the danger of the community. *d*. The tuberculous must not wear long beards, nor allow their mouths to carry infection to others; and contaminated clothes should be frequently sterilized by heat. At least in the houses of expectorating tuberculous patients, carpets are an abomination, and the sweeping of rugs even should be forbidden. *e.* The truth should be inculcated that only the most scrupulously careful patients of those who expectorate much can avoid contaminating their clothes and articles about them, and that, therefore, the watchfulness should be perpetual. *f.* It requires most exceptional nursing of a consumptive who expectorates much to prevent contamination of his room. Therefore it ought to become public policy that health officers should, in their discretion, as a general rule, when they receive reports of death from pulmonary tuberculosis, require that the rooms in which the patients died shall be immediately disinfected. The only exceptions should be where the proof is positive that perfect cleanliness has been maintained throughout the sickness. *g.* The people ought to be instructed that when one is seized with tuberculosis—especially that form which leads to consumption—there should be immediately adopted a radical plan of management of the case, to include, as far as possible: A reduction in labor and care; a change in surroundings and conditions of life; a life either quite out-of-doors, or, if in-doors, with as much fresh, pure air as possible; the greatest amount of rest and sleep; the best nourishment suited to delicate digestion, and taken oftener than is usual in health; and a sharp reduction in exercise if fever is present. Conservative medical treatment, to be prescribed by the physician, is useful but secondary. The foremost purpose must be to increase the resisting power of the body to the disease. Thus only does recovery come, and the greatest single measure to this end is probably the out-door life. Consumptives should become out-door instead of in-door animals. The chief advantage of good climates for the disease is in the possibility of the patient's living out-of-doors, although dryness of air is valuable and altitude has benefit for many cases. *h.* Nothing will be gained in this day and generation by attempting to secure by law the reporting to health officers of all cases of tuberculosis. Many physicians will never report their cases frankly; they will hide them, treat them under inaccurate and unscientific diagnoses, conveniently forget and even prevaricate, and their patients will sustain them. Such laws already enacted are dead. It has been and will be found impossible to execute such a rule, as to any disease that is never epidemic, but invades the bodies of half the people, many of whom go about in apparent health for years, and forget that they are seriously sick. And even if the health departments had the reports they could not serve any useful purpose except for statistical generalization; a purpose that is frustrated by the comparative worthlessness of all such records. *i.* All tuberculous farm stock, especially all animals whose bodies or products become food, if manifestly sick must be destroyed, and at public expense if not otherwise. But many mildly tuberculous cattle, like men, recover when given a better physiological chance; and recent events have shown that legalized attempts to destroy, to the burden of the community, large numbers of domestic animals that have all the appearances of health, sometimes meets with such opposition as to frustrate the whole beneficent scheme. We ought to have known and expected this, and it is pertinent to ask if it is important that meat shall be always free from a final few tubercle bacilli, that are killed by cooking, when fed to people, a large percentage of whom have live bacilli in their own bodies. It would be better to try to educate the people to pasteurize their milk and always cook their meat, and to adopt a temperate destructive policy as to cattle and a strenuous policy of care and segregation of slightly tuberculous stock, rather than, with measures that are open to the fair charge of being too radical and sweeping, to arouse a reaction that shall every few years sweep from the statutes of a state all the really necessary laws of this kind.

5. The sanatorium idea is increasing in this country. It is becoming popular as it has grown in popularity abroad, and it offers the greatest hope for tuberculosis patients. The people are beginning to discover the value of regular sanatorium management for the cure of this disease. The cure depends vastly on an increase of the specific resisting power of the patient, and this can be accomplished best by hygienic measures carried out faithfully without a break for many months at a time. Fresh air, out-door life and a regimen of rest, diet, exercise and sleep, which tend to increase the physiological forces that destroy or repress the bacilli, are the most important measures. Patients *may* carry out these measures by themselves, under advice and with a special nurse for each case, but usually they do not, but blunder at least one day in the month, by some excess or omission, and so neutralize all their previous gain. The sanatorium properly managed offers the best means up to this hour for the cure of the average case.

The world was slow to learn that the sick with acute diseases deserve to be nursed by expert hands; that the trained nurse, moved by professional ambition and pride of success, makes for comfort and recovery to a patient, better than the casual care of unskilled strangers, or the agitated excess of inefficient friends. We are only just learning that people in the slow clutch of the most mortal of all maladies deserve a similar expert skill in their care, and to have it continued without interruption through the months and years if need be. The victim of a familiar, creeping death that is avoidable is as much entitled to consideration as if he had the swift plague. Our virtue is apt to be spasmodic; we rouse ourselves for the relief of imminent disaster. It is a soberer and wiser virtue that creates and sustains measures to repress an insidious calamity.

Sanatoria for consumptives should be established all over the country. They are springing up with encouraging rapidity, but nearly all of them, so far, are for the people able to pay. The majority of patients are unable to pay for institution care or for change of climate, and they are as deserving as any. To these the state owes a debt that is as genuine and urgent as any it owes to its other unfortunate citizens, and the state should erect and maintain sanatoria for them. Moreover, by saving the lives of a portion of these patients, and circumscribing the spread of tuberculosis, the state will always in the end be the gainer in wealth. We hold that it is the duty of the American Medical Association, not merely by the mouth of a committee on tuberculosis, but by its general membership as well, to urge on the legislative bodies of the states and the nation the surpassing necessity of these measures.

6. There has been much discussion during the past year over a proposition to exclude by quarantine regulations consumptives from two states of the Union that have been resorts for such patients. We are not aware that the suggestion has even been seriously considered by any medical body, or by the profession at large. But it is true that there has

grown up among some of the citizens of those states an impression that all of the recent increase of tuberculosis originating within their borders is directly chargeable to the numerous cases that have migrated to them. This is probably in part true. But these regions have more and more vivid sunshine than other parts of the country, so that bacilli that are out-of-doors are more likely to be killed. The contamination of the localities, if it has occurred, is most probably from infection of habitations through ignorance and carelessness; and this is an argument for the institutional care of as many cases of tuberculosis as possible, and for disinfection of certain houses, as we have recommended.

Whatever else the states referred to or other resorts for consumption may or ought to do for their own protection, we are convinced that it will be impossible to do it by general exclusion. Not 10 per cent. of the cases journeying thither could be excluded by the most rigid quarantine, and any effort to do this effectively would arouse intense popular opposition, as the mere discussion of the subject has done already. At the same time it would tend inevitably to divert attention from the proper care of the cases from day to day, as the only feasible means of protection for the public.

Norman Bridge,
W. A. Evans,
Paul Paquin,
Committee.

RESOLUTIONS ON TUBERCULOSIS ADOPTED BY THE SECTION ON HYGIENE AND SANITARY SCIENCE.

Whereas, There is large demand for official statement relative to some of the questions pertaining to tuberculosis; therefore we

Resolve, That, 1. It is best that the policy of medical societies, medical officers and medical men be one of education;

2. Steps for the suppression of tuberculosis in this country must be so gradual that organized opposition shall not be engendered;

3. It is the duty of every national, state and municipal government to distribute tracts, arrange for lectures, and in every feasible way educate the people along the following lines: *a*, tuberculosis is contagious; *b*, it is preventable; *c*, it is curable; *d*, it is eradicable;

4. Every citizen of the United States having tuberculosis should have the privilege of living in a tuberculosis hospital; every such citizen should be strongly advised to accept such privilege;

5. Hospitals for cures are almost as essential as hospitals for homes;

6. A temporary residence in a tuberculosis hospital (if the patient cannot remain) is desirable, as in such a residence hygienic laws, regulation of expectorating and danger from contagion can be inculcated;

7. Crowding, bad ventilation and bad drainage are potent factors in the propagation of the disease; this applies as strongly to animals as to man;

8. The present method of arrangement and management of eleemosynary institutions, and especially those in which restraint is a factor, are productive of tuberculosis;

9. The condition of the animals furnishing food in the vicinity of large cities is a subject for consideration by the authorities;

10. While American statistics are so incomplete as to be misleading, nevertheless, it is our opinion that the death-rate from tuberculosis in this country (rural and town population together) does not exceed one-ninth of the death-rate from all causes;

11. While the number of people dying from tuberculosis appears to be decreasing, nevertheless, excluding pneumonia, tuberculosis destroys more lives than all the remainder of the contagious diseases combined;

12. This section should continue a committee on tuberculosis:

13. The proceedings, papers, statistics, etc., of this committee should be published;

14. That the secretary of this section be instructed to communicate with the business committee of the general association relative to these resolutions.

STATE PROVISION FOR THE TREATMENT OF THE CONSUMPTIVE POOR.*

By BENJAMIN LEE, A.M., M.D.
Secretary of the State Board of Health of Pennsylvania.
PHILADELPHIA.

The only ground on which State charities can be justified is that of self-protection. In the case of the dependent classes, such as the insane, the deaf-mutes, and the blind, protection against injury to life and property, or against the loss to society arising from enforced idleness and lack of education on the part of the sufferers, furnishes the excuse. In the case of infectious diseases, the danger to health and life from the extension of such disease justifies the erection of contagious-disease hospitals of all kinds and the expenditure of large amounts of money in the establishment and maintenance of quarantine stations. The foundation and support of hospitals simply for the relief of suffering and healing of diseases is, from the standpoint of strict political economy and true statesmanship, a flagrant misuse of public funds, and leads to serious abuses.

In the year 1898, the Legislature of Pennsylvania appropriated more than three-quarters of a million dollars for the support of general hospitals, every one of which should have been sustained entirely by the community to whose poor it ministered. To lavish the public wealth in this way is simply to create a fund for the manufacture of paupers.

It is only the comparatively recent but now universally accepted discovery of the communicability of tuberculosis which has made it possible for a sanitarian to urge the State to contribute to the care of the consumptive poor, as such. So long as consumption was simply due to heredity and general environment, such a plea had no basis in any proper conception of the duty of the government to the individual. Granted that one person in fifty was affected with tuberculosis, and that there were over a million and a quarter cases of consumption in the United States, what business was that of the State? People must die of something. Why not as well of consumption as of heart disease or Bright's disease? And if there was suffering among the poor consumptives, that was a matter for consideration and relief by private philanthropy. But once admit that consumption is an infectious, and therefore a preventable disease, and presto, the whole situation is changed. The State is losing tens of thousands of valuable productive lives prematurely and unnecessarily every year. Thousands more are wasting their time in taking care of those who are thus slowly dying. Here is a terrible leak in the public resources, a leak which we now know how to stop, and which, therefore, we must stop. That which would before have been an unwarrantable and vicious use of the public treasure now becomes an imperative duty on the part of the State as the custodian of the material prosperity of its people. To put the matter in a nutshell, preventive medicine is the legitimate work of the State, remedial medicine is not, except so far as it may incidentally be preventive.

---

*Presented, in a Symposium on Tuberculosis, to the Section on Hygiene and Sanitary Science, at the Fifty-first Annual Meeting of the American Medical Association, held at Atlantic City, N. J., June 5-8, 1900.

On the evening of the tenth day of January of the present year, a meeting of great interest in this regard was held in the city of Philadelphia. This was a joint meeting of the Philadelphia County Medical Society and the Pennsylvania Society for the Prevention of Tuberculosis. The subject for discussion was "The Duty of the State Toward Those Afflicted with Pulmonary Tuberculosis." It may not be generally known that many members of the Pennsylvania Society for the Prevention of Tuberculosis are not physicians. The object of drawing together associations thus differently constituted was, as stated by the president of the Philadelphia County Medical Society, "through joint discussions to bring about more intelligent co-operation between physicians and the members of the general community in the preservation of the public health." All of the liberal professions and the mercantile community were represented among those who read papers or participated in the discussions. The subject was, therefore, treated from many standpoints, and in each instance by one well qualified by experience to speak. Boston and New York, as well as Philadelphia, contributed to the interest and value of the occasion. What I shall say at the present time will be mainly gathered from the report of this meeting, and I shall make no further apology for borrowing either the arguments or the facts then presented. I have already had occasion to call the attention of this section to the admirable work of the Pennsylvania Society for the Prevention of Tuberculosis, and to urge upon members the importance of establishing similar societies in their own cities and States. The founder and first president of this society, Dr. Lawrence F. Flick, of Philadelphia, read the first paper of the evening, in which he unfolded the plans of that association. Their programme was first of all education, not of the legislators only, but of the entire people. For this purpose great numbers of tracts, clearly expressed, in popular style, had been distributed, on such subjects as "How Individuals Can Avoid Consumption," "How Consumptives May Avoid Giving It to Others," "What Store-keepers, Hotel-keepers and Others Might

Do to Aid in Its Prevention." The registration of tuberculosis, both in human beings and domestic animals, is also urged. But beyond all other measures in practical efficiency was placed the establishment of hospitals and sanatoria for consumptives. It was claimed that in England during the last half century a reduction of 50 per cent. in the death-rate from consumption had been brought about by the establishment of consumptive hospitals. There would be not the slightest necessity for compulsory isolation even were it considered important, as hundreds of poor consumptives are knocking at hospital doors for admission and are turned away hopeless, to suffer, linger and die, and in the meantime communicate the disease to their families and infect the houses in which they live. From having been considered a hereditary, incurable and ineradicable disease, consumption is now, on the contrary, looked upon by the profession as: 1, not hereditary but acquired; 2, as to a considerable extent amenable to treatment, and, 3, as possible of eradication as a scourge of the race by known methods. It is safe to claim that at least 20 per cent. can be cured, and 10 per cent. more can have the disease arrested, which amounts practically to the same thing. In Dr. Turban's sanatorium, at Davos, in Switzerland, of those in the third or advanced stage, 23.6 per cent. were absolutely or relatively cured, and 17 per cent. were found to have remained so, when communicated with, years later.

The results obtained by the establishment of sanatoria for consumptives as private enterprises in Europe, and notably in Germany, were so gratifying as to lead the charitably inclined to feel that a burden of responsibility had thus been laid upon them for the extension of opportunities of this kind to those who were unable to pay for them. To such an extent has this idea been realized that in England there are now accommodations for about 5,000 of these sufferers, either in hospitals for advanced cases, or in sanatoria for those in the earlier, more curable stages. In the city of London there are six special hospitals of this kind. In the city of Philadelphia we have four. These are—1, the Home for Consumptives, connected with which is the House of Mercy, for male consumptives, conducted by the Protestant Episcopal City Mission; 2, the Rush Hospital; 3, the Free Hospital for Poor Consumptives, which at the present time simply avails itself of certain wards in existing hospitals, and, 4, the Jewish Hospital, which has set apart ten free beds for consumptive patients. The first named accommodates and treats an average of 119 patients annually; the second about 70, and the third 40.

In addition to these, the Philadelphia Hospital, connected with the Almshouse, has certain wards set apart for consumptives. But, "what are these among so many?" In the year 1898 the deaths from consumption in that city were 2,590. The provision for the treatment of poor consumptives was actually for 297. The financial loss to the city from these premature deaths may safely be put down at $2,590,000, to say nothing of the loss of production during long illness. The State of Pennsylvania cares for 6,000 insane, 3,000 feeble-minded, deaf and dumb and blind, and 12,000 paupers. At least 15 per cent. of the insane die of tuberculosis, and yet no adequate special provision is made for their care by the State. General hospitals are justified by their responsibility for the health of their other inmates, which would be endangered by the presence of consumptives, in refusing the latter admittance to their wards. With our present knowledge such an intermingling, so far from being an act of mercy, would be little less than a crime. But it is not less a crime to allow this immense class of sufferers to go without hospital opportunities for care and treatment. The Legislature of Pennsylvania passed an act some years since, appropriating the sum of $50,000 for two years, to be used by the State Board of Health, under certain restrictions, for the suppression of epidemics, prevention of diseases, and protection of human life in times of disease and disaster, when, in the opinion of the board, the conditions are so grave that "the local health authorities and individual and organized charity are unable to meet the emergency." It would be impossible to lay down in more definite terms the nature of the responsibility of the State for the furnishing of medical aid, or the limitations which should control such action on the one hand, or on the other to describe more accurately the character of the dangers which constantly threaten human life in the prevalence of consumption. They are of such enormous proportions that the local authorities and individual, and even organized, charity are utterly unable to cope with them. But we have, unfortunately, become so habituated to them that to declare that they constitute an "emergency" would only provoke a smile on the part of the officials who are entrusted with the disbursement of the fund. It has come to be considered the proper thing that one-seventh of our population should be cut off in the middle of its days, at the time of its greatest value to the State, by this single scourge. Hence, it becomes the duty of those who do appreciate the true proportions of this problem to become missionaries to spread abroad the knowledge both of the curability and the preventability of consumption, and at the same time of the necessity for hospital provision on a generous scale to secure these ends. Once the public has thoroughly grasped these ideas, legislators will not be slow in yielding to the pressure which will be brought to bear upon them for making such provision. In Europe this movement is already making encouraging headway. In Germany, France, Great Britain, Sweden, Belgium, Holland, Spain and Roumania much has been accomplished. As is well known, so great an interest has been excited that an International Congress of Tuberculosis has been held, attended not only by physicians and philanthropists, but by government officials and members of royal houses. The Swedish Parliament recently voted 850,000 crowns for a sanatorium for consumptives in South Sweden, and a gift of 2,200,000 crowns from the people to King Oscar has been, with a liberality as intelligent as it was generous, devoted by him to the establishment of similar foundations in northern and central Sweden. In this country we are not without encouraging signs. The New York State Board of Health has adopted resolutions urging the early construction of a State Sanatorium for Consumptives in the Adirondacks, at a cost of not less than $200,000. The Legislature of that State has already passed a bill authorizing large cities to establish hospitals for sufferers from tuberculosis. Massachusetts has already in operation an institution of this kind at Rutland, which cost $150,000. In Illinois an effort is being made, with fair prospect of success, to obtain the assistance of the State in erecting a sanatorium to accommodate 300 patients. Similar enterprises are under consideration in Indiana and other States. In Pennsylvania an admirable site, comprising about five hundred acres on a mountain slope of about 1,250 feet elevation, has been offered to the Pennsylvania Society for the Prevention of Tuberculosis, so soon as the funds can be obtained either from individuals or from the Legislature for erecting the necessary buildings. The United States Government has established a sanatorium at Fort Bayard, N. M., for the care of such of its soldiers as may become affected with the disease. A movement which has already achieved so great a measure of success cannot be stayed. The day is certain to come when State governments will recognize their responsibility in this regard, and there are those present who will live to see, in consequence, an immense diminution in the prevalence and mortality of a disease which at this moment is disabling to a greater or less extent a million and a quarter of the people of this country, and which kills four and a half times as many as smallpox, scarlet fever, typhoid fever and diphtheria combined.

SOME THOUGHTS ON OVERCROWDING AND TUBERCULOSIS.*

By S. A. KNOPF, M.D., New York City.

I have been requested by the secretary of the Committee on Tuberculosis, appointed by the president of the American Medical Association, to write a few words on the etiology of tuberculosis, more particularly on the relation which overcrowding bears to the frequency of consumption. To offer something new in this line is really difficult, for the subject has been treated so many times by abler minds than my own.

In some of my previous publications[1] I have spoken of numerous visits made to the tenements of New York, of the heartrending conditions I have found there among consumptives, and of the sweatshops as agents in the propagation of disease; but, after all, I presume it cannot be repeated too often that the tuberculosis problem, especially in our large cities, will never be solved unless we begin by improving the sanitary condition of the tenements. There should be laws to make the building of any but model tenement houses impossible, and overcrowding should be made punishable. Let this inhumanity to man no longer be permitted. Let the greedy owner of the dark, filthy tenement house, who is not content unless he makes 18 per cent. on his investment, feel the strong hand of the law whenever by the violation of the health ordinances the lives of his tenants become endangered. How can we ever hope, even with numerous sanatoria and special hospitals, to reduce in any marked degree the morbidity and mortality from tuberculosis as long as we allow the main conditions which favor the propagation of the disease to exist or to be daily created anew? First among these we must mention the conditions which have a tendency to undermine the constitution, bringing about a state which we might call physiological poverty—that is to say, a condition in which the natural organs of defense are no longer capable of throwing off pathogenic micro-organisms, to the inhalation of which all of us are perhaps more or less exposed. A family of from six to ten, living in three rooms, of which perhaps one only receives direct light and air, cannot possibly remain in a state of health for any length of time. The vitiated air is breathed over and over again, and even the desire for breathing naturally and deeply, if it ever existed, will become less and less. But besides this lack of air and light, intemperance and underfeeding—two evils which to my mind are not infrequently the result of the overcrowding of the cheerless homes of the toilers—aid to create in the human organism the very best soil for the invasion, growth and development of the tubercle bacilli.

---

*Presented, in a Symposium on Tuberculosis, to the Section on Hygiene and Sanitary Science, at the Fifty-first Annual Meeting of the American Medical Association, held at Atlantic City, N. J., June 5-8, 1900.

[1] "Pulmonary Tuberculosis; Its Modern Prophylaxis and the Treatment in Special Institutions and at Home." P. Blakiston's Son & Co., Philadelphia, 1899. "The Tenements and Tuberculosis." *The Journal*, May 12, 1900.

The second condition which favors the propagation of tuberculosis is the almost absolute lack of precaution taken by consumptive patients dwelling in these tenements to dispose of the infectious sputum. These patients, still able to be about, will disseminate their disease by expectorating indiscriminately in the dark hallways, in their workshop, or wherever they may happen to be. The patients in the more advanced stages of the disease, who, owing to lack of hospital facilities, must remain in the dark bedrooms, where any effective prophylaxis is impossible even with the best intention, constitute, of course, permanent local centers of infection.

Some phthisio-therapeutists and sanitarians think that the compulsory reporting of all cases of consumption would materially reduce these foci of infection. The impracticability of such measures seems evident when we consider that nearly every sixth individual is suffering from tuberculosis in some form or other. Even where such laws exist my experience has convinced me that the cases not reported and not treated are more numerous than the reported and treated ones, and that those once reported, if not taken to a special institution, will often be obliged to move, or will move voluntarily, and so again sight and control of them are lost.

We must do away with the overcrowded, dark, dreary, dirty tenements of our cities, which foster intemperance, immorality and crime, and which, by depriving the individual of pure fresh air and sunlight, predispose strongly to tuberculosis and other diseases.

Houses built on damp soil, whether in cities or country, should be torn down, for no matter how perfect the sanitary arrangement of the building may be, damp soil will foster tuberculosis.

Reporting and even sending a sanitary inspector can have no lasting beneficial effect when the consumptive invalid of the family is obliged to continue to live under conditions which are in themselves phthisio-genetic. I am an ardent believer in individual and general public education in regard to prophylaxis of tuberculosis, and I am the last to underestimate the value of such instruction, but the best fruits can come from it only when we can offer to the consumptive dweller of the tenement ways and means to do better, or to get out of his unhealthy environments. Our present knowledge in phthisio-therapy has taught us that a tuberculosis patient may be successfully treated wherever there is plenty of air and light. Not only tuberculosis, but many other diseases will disappear in proportion to the number of model tenement houses created by the efforts of our statesmen, municipal governments, or the individual efforts of philanthropists.

We must have sanatoria and special institutions to treat the curable and isolate the hopeless consumptive poor; but we must have a far greater number of model tenement houses, built on good soil, with good drainage, houses where sunlight can enter in abundance, where overcrowding is impossible, and which are constructed in a manner that pure air can have access to every room; where privacy is guaranteed, and where the honest toiler will find pleasure in remaining at home. Give to the workingman a pleasant, clean, healthy and comfortable home and the rumshop will have fewer attractions for him. The money formerly spent for liquor will go to the butcher and baker for the better nutrition of himself and his family, and underfeeding—the other important phthisio-genetic factor —will be materially lessened.

The overcrowding of schools, bad ventilation of the classrooms, too much indoor work during school-life, and not enough outdoor play will, of course, further any tendency to tuberculosis in childhood. Our city fathers, boards of education and teachers must unite in rational reforms. Consumptive school teachers should not be allowed to teach in public schools, neither should consumptive pupils be admitted to these institutions. For the latter school-sanatoria in healthy localities should be created, and the unfortunate tuberculosis teacher in the incipient stage of the disease might here also find useful employment and regain health.

Overcrowded prisons, asylums and almshouses, of course, not infrequently contain numerous foci of tuberculous infection, and the close contact in which the prisoners and patients live facilitates the propagation of the disease. More cubic space per individual, more systematic ventilation, and the isolation of tuberculous invalids are the remedies which should be urgently applied. The experiment in Alabama with a convict camp for tuberculous offenders seems an interesting and useful innovation in the line of modern prophylaxis of tuberculosis.

Shipbuilders and shipowners also should bear in mind that the intensely crowded quarters to which the average sailor is confined during his hours of rest and sleep are absolutely detrimental to his health, and even the outdoor life during the hours of work cannot counteract the deleterious influence which the vitiated air of the forecastle exerts on the health of the brave seaman. A tuberculous sailor, still at work, is almost certain to infect his comrades, for there is hardly any class of people which live in more crowded quarters than the seamen. The shipbuilders and masters of vessels must seek to remedy this evil.

Factories and workshops should be submitted to sanitary inspection to prevent the workrooms from being overcrowded, and to see that they are properly ventilated.

Lastly, the physicians, statesmen and philanthropists interested in the solution of the tuberculosis problem have, besides working for the better housing of the poor and the creation of special institutions for the treatment of consumptives, an additional mission to perform. The tide of emigration from village to city should be reversed. If tuberculosis has made its appearance in a family living in a large city the physician should exert all his influence to induce them, especially the younger members, to migrate to the country and seek outdoor occupations. Statesmen should protect the interests of the farmer, so that farming will have more attraction to the rising generation than it has had in the last few decades; and philanthropists should aid the statesmen by endowing institutions for instruction in scientific and profitable agriculture, and also by providing healthful amusements in country districts, and thus make living outside of large cities more interesting.

The creation of schools of forestry in connection with the preservation and cultivation of forests in many States where a wasteful destruction of trees is now carried on would give useful and healthful employment to a number of people, as well as render the regions more healthful. It would offer attractive careers to young men seeking to overcome hereditary or acquired tendencies to tuberculous diseases.

I submit these few thoughts on overcrowding and tuberculosis in the hope that they may be helpful to those who have the desire and the means to aid in the combat against the "great white plague."

16 West Ninety-fifth street.

THE SANITARIUM FOR CONSUMPTIVE SAILORS ESTABLISHED BY THE U. S. MARINE-HOSPITAL SERVICE AT FORT STANTON, N. M.*

By J. O. COBB, M.D.

Passed Assistant-Surgeon U. S. Marine-Hospital Service.

There is a prevalent belief that the sailor does not have tuberculosis. Just because he is at sea, breathing the purest air, we naturally think of him as having the greatest chance of escaping that dread infection. The public mind loses sight of the fact that the average sailor spends a great part of his life ashore, participating in drunken brawls, gambling in the vile holes underground in New York, San Francisco, Baltimore and all the large maritime commercial centers. The little time he spends in sleep when ashore is in sailors' boarding houses, usually filthy dives. In lieu of beds, there are rough bunks built in like a set of shelves clear up to the ceiling. Into these a little straw is thrown, and this is the bed of one man one night, and another the next, and so on. The straw is rarely, if ever, changed, and this is the only bed these poor fellows can get in these gruesome places. They need no covering, for the room is heated by the red-hot stove, around which some sit and smoke and play and drink the long night through. Such a place is awful to think about, and it is small wonder these men get sick; it is the greater wonder that every man so exposed is not rapidly infected with tuberculosis, for it is only reasonable to believe that all such places become infected in time. Then, too, it is easy to understand that one case may infect an entire crew at sea, on a long voyage, when the men are packed together like animals. The sailor breathes pure air only when he is on watch, but when he "turns in," his sleeping quarters are exceedingly bad—so bad that it is impossible to describe them adequately without subjecting one to the accusation of exaggeration.

---

*Presented, in a Symposium on Tuberculosis, to the Section on Hygiene and Sanitary Science, at the Fifty-first Annual Meeting of the American Medical Association, held at Atlantic City, N. J., June 5-8, 1900.

We of the service know that there are hundreds of consumptive sailors, and our annual reports show that we have been losing on the average more than one hundred a year. Our experience has also shown us that all the cases that remain eventually die; they drift in and out of the different hospitals, better to-day and worse to-morrow, and sooner or later serve as a necropsy study.

So it has gone for years. No movement which is purely humanitarian can be brought about without much talk and some sober writing. Officers talked and thought, but unfortunately this is usually what a non-political government officer is compelled to do—take it out in talking or writing, if he is so inclined. It is to the credit of the officers of this service that they have ever been alert to the prevention, spread and proper control of the disease. The present surgeon-general, Dr. Walter Wyman, was the first in the service to undertake to bring about the establishment of a sanitarium for consumptive sailors. This was many years ago, when he was a junior officer, and his efforts met with little encouragement, and although unsuccessful, he can properly lay claim to being a pioneer. He did not forget his early ambitions after he became surgeon-general, and it fell to his lot to be the instrument to consummate the establishment of a sanitarium for consumptive sailors.

In December, 1898, I was sent on an inspection tour through Arizona and New Mexico for the purpose of recommending a site for the contemplated sanitarium. It was thought that as the army had been first in the arid region—and, of course, had selected the most desirable site—abandoned posts would best serve our purpose as fulfilling the requirements of large tracts of land, good water supplies, and that the data published by the officers of weather and other conditions would be very valuable as a guide.

After careful examination in both territories, Fort Stanton was decided on as best suited for our purposes, specifically and generally. The weather reckonings made by the army, together with special reports by its officers serving here in early times, showed mild winters, with delightfully cool summers. It was necessary to have a station combine these two features or else have two stations, one at a low level for winter and one higher for summer, for otherwise patients at low levels would lose in summer all that had been gained in winter. With its undoubted advantage of climate, a generous water supply, a large reservation, and with substantial stone buildings, it is an ideal site.

Fort Stanton is situated in Lincoln county, N. M., about six miles from Capitan, the terminus of the El Paso and North Eastern Railroad. The elevation is 6,126 feet. There are 38 buildings of various sizes, most of them being of native rubble stone. There is room for 200 patients, besides quarters for officers and attendants. Repairs are going on, and new machinery is to be introduced shortly. A modern steam laundry and a one-ton ice plant are now contracted for, and the plans and specifications are being prepared for an electric light plant and extensive repairs, which will be commenced this fall. All the buildings will be made modern, and the appointments will equal any in the country. The laboratory will be conducted especially in the study of the disease. The apparatus for the purpose is already on the ground and is temporarily set up in an old building awaiting the repairs on the executive building, where there is to be a room set apart for this purpose.

There is a large farm and garden attached to the station. On the farm is being raised all the forage and most of the grain for the horses, milk cows, cattle and chickens. In the garden we have a source of pleasure not often found at such institutions. We have all the fresh vegetables needed and such vegetables as cannot be bought in this vicinity.

Our herd of Jersey milk cows supply all the milk used at the station. While speaking of the cows, it may be of interest to describe the method of dealing with the milk. We try to have all the patients follow as nearly as possible the method of taking milk described by Dr. Bulkley. To make this a little more perfect, it is necessary that the milk should always have a given percentage of fat, and to obtain this our milk is cooled immediately after milking and run through a separator. The cream will turn out about 20 per cent. (volume), and then this is added to skim milk to make it 20 or 25 or 30 per cent. of cream, as is prescribed by the medical officer. In this way there can be no marked variation in the percentage of fat, as there would be on cold, stormy days, or in change of food or other well-known conditions, which cause a cow's milk and fat percentage to vary. We make some butter and buttermilk, and intend to make kumyss and kefir. The patients have increased so fast that we are not altogether prepared for them, as it was the original intention of admitting only twenty the first year.

The reservation is very large and it is the intention to fence it for pasturage and to raise our own sheep and beef cattle. This will be not only a paying operation, but will give us fine meats. Fort Stanton was set aside for a sanitarium by executive order dated April 1, 1899, and the station was officially opened April 27, 1899. To date there have been seventy patients admitted, six of whom have died, seventeen have been discharged, thirteen improved and four apparently recovered. Seven of those discharged improved are still under observation as attendants, of whom all appear to be well except one. This one, however, was a bad case, but is now doing well. Three cases reported as improved are working in the vicinity. One of these had both lungs badly infected, but as he was strong, had no fever and felt well, he obtained employment at the mines near here and is working every day. He reports that he still expectorates, but otherwise is still improving. Another has just gone to work. His trouble originally was a tubercular empyema, for which several ribs were partially resected. The other man is well.

Of the cases remaining we shall probably lose a few, but seven seem to be entirely cured and will be sent back as soon as the hot weather in the East is over. Twenty-one seem to be arrested, though the evidence of the disease still persists. Of those who died, only one was a good case when he came. This man had a small cavity, which apparently began to heal. He began to improve after a time, and would probably have recovered but for contracting tubercular pneumonia on his good side. Of the other cases which died, not one was considered, by the officers of this station, as good subjects for transfer and all died shortly after reaching here.

To get the patients constantly in the open air has been a most vexatious problem. Most of them came here from hospitals which were heated by steam and would have rebelled had they been put in the open air to sleep immediately after arriving. Knowing the sailor as I do, it was necessary that all this be brought about indirectly and gradually, and now they are very enthusiastic for the open air. All sleep with the windows and doors open and in the day they walk about, swing in hammocks here and there under the cottonwood or box-elder, ride the native ponies, which are for their use, or recline in easy chairs or amuse themselves by doing odd jobs. One man bought himself a tent and sleeps out every night.

To find means of diversion or amusement has been a hard problem and will continue to be so. While they are running fever or otherwise doing badly, I have no trouble, but just as soon as they begin to get well they become restless for the water again.

In the matter of treatment, dependence has been put in keeping the men constantly in the open air and giving the best of food. However, we have had several cases with severe complications, malaria being the most frequent. Many of the men have come from localities where they had previously contracted malaria and I have several under observation whose blood is full of the organisms. Dyspepsias are exceedingly troublesome and loss of appetite in some cases hopelessly discouraging, these complications compelling us to give some medicine. Just here it is well to warn those who have not had much experience with heroin to be cautious in its use; the habit is easily contracted.

2. We have been making some careful observations of the effects of altitude. If mere clinical experience is worth anything at all it leads me to believe that most cases become anemic shortly after coming here. Of course, the blood-count and hemoglobin percentage are increased, but I feel certain, without being able to prove it, that it is not actually true. After a time the proper relative standing of the blood-count and hemoglobin is re-established and the increase is actual, though the readings of the instrument may not show an increase. I have about decided that the blood tests can only be of interest as a guide to each individual's relative condition and progress. Collectively the tests are misleading. We have noticed, too, that the majority of patients lose weight at first, notwithstanding an improvement in appetite and general symptoms. The urea percentage is markedly increased and has continued so with cases under observation.

The method of handling the sputum and preventing infection will be of interest to the general practitioner. There are no half-way measures. The theoretical part is nearly perfect and its execution will be almost so when all the sterlizers are put in place and in operation. I am happy to say that there is no such thing at this station as a spittoon, which demonstrates that a large institution can be run without one. To have a spittoon lowers the standard of effectiveness at once, for no one will deny the dangers of using one. Any method of sterilizing sputum except by incineration or steam heat is not perfect. Any method of collecting sputum by the process of ejecting it from the mouth at a distance into the receptacle is unsafe. The receptacle must be brought close to the mouth. The patient must have his own receptacle, for it is disgusting to see the sputum of others. To secure this desirable end we are using sputum-cups and pocket sputum-flasks. Each patient has a flask and cup, but I find that they dislike the cup and nearly all of them want to use the flask only. They carry the flask wherever they go, and use the cup in their rooms. Once a day at a given time every cup and bottle used is carried to the sputum room and there checked off, by an attendant, from a complete list of the patients. It is necessary to keep close watch on each individual, and take note whether he brings his cup and bottle for sterilization, for if we did not he might empty the sputum in the sinks and closets.

The cups and flasks are placed in the sterilizers and the temperature maintained at 245 F. for one hour. This heat thoroughly liquefies sputum and makes it easier to cleanse the receptacles. Our large sterilizer is not yet set up, but when it is, all the bed clothing and individual clothing will be sterilized by steam or formaldehyde at regular intervals.

We, as a nation, lead in all matters for the social and political welfare of man; but we have been very strangely conservative in helping him in his sickness, especially in the inner circles of his home, there to combat the ravages of disease which are undoubtedly caused by the greed of owners and keepers of unhygienic tenements, where men, women and children have less care than given domestic animals. The average legislator is exasperatingly narrow in matters pertaining to public health, unless his pocket or the pockets of his constituents are affected. Let a wide and destructive epidemic break out among animals and then how prompt legislation is introduced to suppress it! There is money! It is a crying shame that this country, one of the foremost in all grand evolutionary movements, should have waited till the closing year of this century before joining in the sanitarium movement against the worst foe of mankind. What excuse can there be? None. The results were well known to be good and it was not an experiment. The way had been marked for us by Germany as a leader in this crusade with her first sanitarium in 1859 at Goerbersdorf, or 1854, according to Von Leyden. The impetus given to the sanitarium movement by the patronage of the Kaiser has done much to stimulate still greater effort. Even the life insurance companies of Germany have built sanitariums for their insured. This has been found by the insurance companies to pay, and it is to be hoped that the companies of this country will soon follow their example. The mutual aid companies should, by all means, do something for the many consumptives that they undoubtedly have in their membership. I have heard that the question had been seriously presented to the A.O.U.W., as this order has hundreds of consumptive members.

The philanthropy of our large cities has long done much harm in building large hospitals for this class of patients. Wealthy men and women have subscribed immense sums to erect places where the poor consumptive could go—and die. Make them comfortable has been the cry. The end was inevitable. A new sense of responsibility is now thrust upon the man or woman with means, for this frightful death percentage must not be. The case must be diagnosticated early, and that is the awful and fearful responsibility of the physician. And look to it, you who make snap diagnoses with the unaided ear through the patient's clothing, and who never make thorough chest examinations of women at all; and you who stain one specimen of sputum and finding no bacilli declare the trouble is only bronchitis; or you, the worst offender of all, who withhold from the patient the true nature of his disease, allowing him to go on expectorating at random, spreading the infection broadcast and to the members of his own household! And I say to these, and to the vampire who holds his patients, drugging them to death, finally abandoning them when they are in a dying condition by sending them to health resorts, that the public is awakening to the realization of the danger of delay, and in wrath will have none such as you.

The phthisiologist cannot make a successful issue of this undertaking without the aid of the conscientious general practitioner. I am told that in Germany every medical man is alive to this question and the most careful examinations are being made to detect the disease in the first stage. Tuberculosis is not such a grave disease if taken in hand early and sent into the pure open air.

Medical men have no money, and if they diagnosticate their cases early, then the public at large, through its wealthy citizens or its municipal, State or governmental authorities, becomes obligated morally as well as socially and economically, to give the patient a chance for his life. It must not be care for the doomed and dying—the reach must be greater and extend out to the home of the sufferer. Man of wealth! Woman of wealth! Do not put your money in grand edifices in the overcrowded city, where your philanthropy only serves to make a doomed consumptive's life comfortable for a few weeks—at most a few months. Go to the woods all about you and put these people where there be a chance for recovery and where they can return to their homes as useful citizens. This much may be hoped for, but even if the patient should die, we will have gained by removing the focus of further infection. This to me is the most important side of the subject.

All grand movements begin first with suggestions, and nothing is ever accomplished except by discouraging setbacks at every turn. Men like Trudeau cannot help but look back with pride on their accomplishments under the very great drawbacks they must have had. What a sensation must the founder have had when, in 1884, the first little cottage at Saranac Lake came into existence! His was no selfish ambition; what must have been his hopes and fears? He would have been laughed at then if he had gone to Congress or his State with a bill to help erect this same little cottage. His patients were not animals, and there was no loss to the pocketbook, therefore no need of legislative help.

The public is awakening to the danger. Towns, cities and States have become aroused, and now that our Government, first through the Marine-Hospital Service, and then very shortly after by the army, has given its official cognizance of the importance of stamping out the white plague, we may expect in the next few years a forward move of which we may be proud. Of course, the work done by the government may, in a way, be comparatively small; yet of all the patients admitted were not one to recover, were all to die, still the good done to the community at large is inestimable. So many foci infection removed from our ships in their world-encircling courses; from the barracks, camps and hospitals of the army; from the sailors' boarding-houses; from our general hospitals, where we have had such a discouragingly large percentage of deaths; to bring all these patients away from thickly populated centers, where they undoubtedly spread the infection, is an accomplishment itself of no mean importance.

With such opportunities for study afforded by the well-equipped laboratories, the ever-increasing clinical material, it is not too optimistic to feel that we may help to clear away one by one the many obstacles yet confronting the world in effecting immunity and cure.

THE DIAGNOSIS OF PULMONARY TUBERCULOSIS.*

By ROBERT H. BABCOCK, A.M., M.D.
Professor of Clinical Medicine and Diseases of Chest, College of Physicians and Surgeons.
CHICAGO.

This may be a matter of considerable ease, or one of extreme difficulty, depending on the stage of the disease and the nature of the pathologic conditions. Let us first consider its diagnosis at an early stage. Tuberculosis is an infection, and, as is the rule with infections, it occasions a rise of temperature even at its incipiency. Except very rarely, when the infection is violent or the disease assumes the acute pneumonic type, the elevation of temperature is slight, and may even escape detection. If the thermometer shows a constant elevation ranging between 99.5° and 100.5° F. it is in a suspected case strongly suggestive of tuberculous infection. The temperature should be registered not merely night and morning, but four or five times daily, as, for instance, at 9, 12, 3, 6, and 9 o'clock.

The pulse is, as a rule, accelerated, and to a rate out of proportion to the temperature. But it should be remembered that an individual who is under examination for suspected tuberculosis is apprehensive, and therefore likely to manifest acceleration of the pulse. Nevertheless, the pulse-rate will be found to range in the neighborhood of 100, not rarely 120 or thereabouts. It is usually a pulse of low tension, and this is more characteristic than is an increase in the frequency. Undue rapidity, together with lowness of tension, forms, in the absence of signs of cardiac disease, a very suspicious combination. Its value is enhanced if conjoined with increased body temperature between the extremes noted above. The respirations may or may not be increased. As a rule, in incipient cases, there is neither subjective nor objective dyspnea.

Loss of weight is a suspicious circumstance, and is an invariable accompaniment, I believe, of incipient pulmonary tuberculosis. It is so often slight that it escapes the patient's notice, and therefore his statements are not always to be relied on. The value of this symptom depends largely on its association with other symptoms and signs; without them it can scarcely be held suggestive of tuberculosis. Decline in strength and a falling off of appetite are also to be considered in doubtful cases, but are of small evidential value.

---

* Presented, in a Symposium on Tuberculosis, to the Section on Hygiene and Sanitary Science, at the Fifty-first Annual Meeting of the American Medical Association, held at Atlantic City, N. J., June 5-8, 1900.

Cough is usually the first symptom to attract the patient's attention and to arouse apprehensions in the mind of the physician as well as of the patient. Although it is frequently symptomatic of this disease, even at its invasion, still it is not invariably so, and taken alone has but small diagnostic value as regards pulmonary tuberculosis. In every suspected case in which physical signs do not settle the question of diagnosis, the upper respiratory tract and the heart should be carefully examined for an explanation of the cough. Aurists will say that even the ears should not be left out of the field of exploration.

Sputum is, for a time, absent in cases of beginning tuberculosis, but when present exhibits nothing characteristic, unless, of course, it shows bacilli. Even hemoptysis is not pathognomonic, although highly suspicious of pulmonary tuberculosis. When due to a deposit of tubercles in the lungs, physical signs may usually be detected, or there will be some of the suggestive symptoms already considered. If not, then the gums, nares, pharynx, larynx, trachea and heart should be carefully examined for a possible source of the hemorrhage. In conjunction with a slight rise of temperature, loss of weight and cough, hemoptysis is very significant of tuberculosis.

Having thus briefly considered the symptoms attending incipient pulmonary phthisis, let us now take up the physical signs.

Inspection.—It is not necessary to describe the contour of the thorax with its narrow apices, weak musculature, deficient expansion, etc., which so often characterizes the tuberculous diathesis, and therefore I shall pass at once to such evidence of early tuberculosis as may be gained by inspection. One of the earliest ocular signs is lessened expansion of one apex, observed oftentimes in the supraclavicular region. This area may be slightly depressed or retracted, as compared with the other side. In rather more advanced cases, or those in which the tubercular deposits are not so limited, these same changes may be noted in the infraclavicular region as well. Another sign, which by Carcassonne and others is said to be a very early and significant one, is atrophy more or less marked of the scapulothoracic muscles on the affected side. That drooping of the shoulders, which forms a part of the phthisical habitus, may be seen at an early stage, but is generally present when the disease is more advanced.

Palpation does not furnish very reliable or positive information, except as corroborative of that obtained by other means. It is so largely influenced by individual peculiarities. Nevertheless, when in a suspected case there is a marked difference in the pectoral fremitus of the two apices, that apex at which it is distinctly increased is apt to be the seat of tubercular deposits. This is particularly likely to be the case in the suprascapular region, for a reason which is about to be stated.

Percussion is the means generally relied on for the detection of incipient pulmonary tuberculosis, yet it is not always so trustworthy as is auscultation. Dullness at either apex is usually regarded as indicative of the disease in question, and justly so. Still, one should always bear in mind that it is normal for some individuals to show slightly less resonance at the right apex. Therefore, in estimating the importance of trifling dullness at the right summit of the chest one must also consider the presence or absence of the symptoms of constitutional disturbance already spoken of. It is common for physicians to look for impaired resonance below the clavicle, whereas in my experience it is far more frequently found above and in the suprascapular region. This is owing to the fact that, as pointed out by Fowler, deposits of tubercles take place earlier and more frequently at the tip of the lung, along its borders and on the posterior aspect of the apex. Consequently a small patch of deficient resonance may often be detected behind in the suprascapular fossa, when in front there is no appreciable dullness. It is also in accord with my experience to find diminished resonance early along the vertebral border of the scapula, to uncover which it may be necessary to have the patient fold his arms across the chest in such a manner as to draw the shoulder-blades apart. For the sake of emphasis let me repeat that whenever these changes, however slight, exist at the left apex, it is strongly indicative of tuberculous disease. Finally, an initial alveolitis may sometimes occasion slight hyperresonance of a tympanitic quality. At a later period dullness replaces this tympanitic resonance.

Auscultation is a valuable method for the early recognition of pulmonary tuberculosis, yet to be of full service requires great familiarity with normal breath-sounds and slight transitions therefrom. As with regard to percussion, so also with auscultation; one must remember that it is normal to some individuals for the respiratory murmur at the right apex to be less vesicular—that is, bronchovesicular, as compared with the left. Therefore, slight modifications on the right side do not have the same significance as when they are found at the left. Slight dullness and bronchovesicular breathing at the right summit of the chest, whether in front or behind, do not of themselves, without some of the more significant symptoms, constitute sufficient evidence on which to base a diagnosis of tuberculosis. Their value would be greatly enhanced if in a circumscribed area the inspiration should be wavy or jerky. Occurring on the left side, where vesicular breath-sounds are the rule, a bronchovesicular quality of the respiration is highly suspicious. When there is distinct bronchial breathing at either apex, it is not normal, but indicates disease, and being associated with unmistakable dullness, usually warrants a diagnosis of tubercles. Râles are not always present in incipient cases, and often when not heard on quiet respiration will be elicited by a deep inspiration or the act of coughing. Under these conditions they are fine crepitant or subcrepitant crackles heard toward or at the end of inspiration. They convey an impression of being moist, and not infrequently are mingled with fine bubbling râles of a somewhat larger size. These adventitious sounds may be very limited in extent or may occupy the entire dull area. Heard in either of the suprascapular fossæ they furnish extremely strong evidence of the disease under consideration. In front, especially along the inner margin of the lung, friction may be mistaken for these râles, yet should any such minute crackling râles be detected, it is generally safe to assume that tuberculosis is responsible for their presence. Incipient tuberculosis is, as a rule, unilateral, and bronchitis of non-tuberculous nature is bilateral. Moreover, the râles it produces in front are either heard over the course of the larger bronchi, and are of large size, and toward the base rather than at the summit. The conjunction of dullness, bronchovesicular or bronchial breathing with these minute râles at one or both of the apices posteriorly will generally justify the conclusion that the lung is tuberculous. When these signs are distinct, doubt of their significance can scarcely be entertained. Moreover, in such pronounced cases there are usually well-marked constitutional symptoms. There is usually sputum, and this will very probably contain bacilli. The difficulty is in incipient cases which furnish no physical signs or such as are so ill-defined that even a skilled examiner is not quite certain of their existence. If the temperature, weight, pulse-rate, state of the patient's strength, examination of the sputum, etc., cannot help one out, then he would do well to postpone a definite diagnosis until by repeated examinations he can at length arrive at a positive conclusion. Not infrequently an experienced observer may become mentally convinced from the family and personal history, as for instance of previous pleurisy, from the general make-up and appearance of the individual, from the symptoms and from the *tout ensemble* of physical signs, that the patient has tuberculosis, and yet he does not feel warranted in giving expression to his conviction. If it does not seem best to wait for time to clear up the doubt, then recourse may be had to tuberculin, of which I will speak more fully a little later on.

Mensuration of the chest, which should include not only its expansion, but also its relative size as proportioned to height, the determination of the vital capacity by means of the spirometer, the individual's weight as related to his height, these and other accessory circumstances have their diagnostic value, but cannot be more than referred to in the limits of this paper.

As regards the employment of the old tuberculin for diagnostic purposes, there is wide diversity of opinion, so wide, indeed, that statements are flatly contradicted. The opponents declare that it is not only unsafe, but also that it is unreliable, producing a reaction in syphilis and sometimes failing in cases of tuberculosis. The advocates of its use state the opposite just as positively. By those who have employed it extensively it is, however, stated that injurious effects follow too large doses or too frequent repetition of the injections. Therefore, the precautions to be observed are as follows: 1. Use Koch's old tuberculin, not tuberculin R. 2. Let the initial dose be .5 to 1 milligram of the tuberculin; larger doses than this to begin with are sometimes employed, but it is better to err on the side of caution. 3. If the first injection is not followed by the characteristic reaction, double the dose may be injected after an interval of three days. Some advise a shorter interval than this, but, as there can be no other objection to waiting so long than the loss of time, it is again better to be over-cautious. 4. Should this dose again not be followed by reaction, double the second dose may be given after another three days. It will seldom happen that a tuberculous individual will not react after receiving as much as 5 milligrams, which may be regarded as a safe third dose. Occasionally, a large-sized and insensitive person will require even as much as 10 milligrams, but this amount should be reached gradually. The characteristic reaction consists of a rise of temperature of 2° F. above the patient's average daily temperature as determined by repeated observations during several days prior to the first injection. There is often also a feeling of malaise and some increase of cough. This reaction generally takes place within twenty-four hours following the injection, but may be delayed to quite twenty-four hours. Carried out with the ordinary precautions stated, I consider this means of diagnosis safe, and have no hesitation in recommending it in cases in which careful physical examination does not enable one to arrive at a conclusion. I should not, however, advise recourse to this diagnostic procedure without having first exhausted other means at hand.

Of late we have been hearing much of the service rendered by the X-ray in the field of diagnosis. Tuberculous infiltration of an apex is revealed by a slight shadow in the affected area. It also affords a means of detecting enlargement of the bronchial glands. This was recently very well shown in the case of a man who was sent to me for diagnosis. The skiagraph also showed slight opacity of the right apex, and thus confirmed what I had discovered by physical examination, yet which was so faint as to leave room for doubt.

It has also been recommended that small doses of potassium iodid, 3 grains three times a day, be employed to clear up doubtful cases. If there is slight alveolar catarrh of one apex producing uncertain physical signs, this potash salt will occasion the development of fine râles in the affected area or so modify the quality of the breath-sounds as to aid in the diagnosis.

Agglutination of the blood, after the Widal method, is too recent and not sufficiently proved to require more than a passing mention. There now remain only a few remarks concerning the diagnosis of advanced pulmonary tuberculosis. When the disease has progressed to this stage, there is generally mixed infection, and it assumes the picture of ordinary consumption. As a rule, there is no difficulty in arriving at a correct diagnosis in these cases. The symptom-complex alone is sufficient, and yet I would be the last to advise a reliance on symptomatology without examination of the chest. Occasionally, in aged people or persons with extensive chronic bronchial catarrh, it is not always easy to decide whether tuberculosis may not exist in such cases. A correct interpretation is facilitated by bearing in mind the fact that tuberculosis is a unilateral disease as a rule, and that the apex is always more involved than is the base of the lung. Of course, when the disease has progressed to an advanced stage, both lungs are likely to yield signs of the disease; but one can generally determine that the disease is more extensive or more advanced in one than in the other lung, one having been affected primarily, the other secondarily. Although râles of associated bronchitis may exist throughout, they are likely to be more numerous at the bases and of a different character from those of tuberculous apex diseases. These latter are of a crackling kind, small or medium sized, and are found together with dulness on percussion. If the breath-sounds are not so obscured by râles as to be of undeterminable quality, they are bronchovesicular, bronchial or cavernous. Dulness at the base and resonance at the top do not occur in pulmonary tuberculosis, unless very exceptionally a basic affection becomes secondarily tuberculous. When anfractuous cavities have riddled an upper lobe, or tuberculous foci are scattered with comparative healthy intervening tissue, and not a normal opposite lung with which to make comparison, it may not always be easy to determine the exact nature of the percussion note. One must then rely on auscultation to help him out, or he must await the result of treatment, in the hope that by clearing up the bronchitis at the base he may then definitely ascertain the condition of the apex. The detection of bacilli in the sputum will settle the nature of the case; but these are not always present in chronic ulcerated phthisis, and the failure to detect bacilli is no proof that the affection is not tuberculosis.

It may be set down as a general proposition that dulness and bronchovesicular or bronchial breathing and râles at the apex indicate pulmonary tuberculosis. Signs of excavation corroborate the diagnosis.

Limited space forbids further consideration of this subject. I have endeavored as far as possible to present the subject in a general way applicable to the vast majority of cases and not to detail the multiform deviations that may be encountered. Neither have I attempted to discuss the diagnosis of acute cases of the pneumonic type, but merely the form of the affection most often met. Acute tuberculous bronchopneumonia, being an apex disease, is governed, so far as concerns its physical signs, by the same principles that underlie the diagnosis of the chronic varieties. The main difference consists in the greater severity of symptoms and more rapid development of the changes on which the physical phenomena depend.

103 State street.

MISSISSIPPI VALLEY MEDICAL ASSOCIATION.

Twenty-sixth Annual Meeting, held at Asheville, N. C., October 9-11, 1900.

President Dr. Harold N. Moyer, Chicago, in the Chair.

Addresses of Welcome on behalf of the city, state and local profession were delivered by Hon. Theo. F. Davidson and Dr. John H. Williams.

Presidential Address.—Dr. Moyer referred to matters of general interest to the profession. He alluded to an address which was delivered at the recent International Medical Congress by a distinguished American colleague, who saw fit to discuss the old code question. The speaker (Dr. Moyer) thought it unfortunate that this subject, long since dead, but not buried, should be embalmed in the records of that Congress. The medical profession of America does not need an apologist for its standard of medical education to-day, and in support of this contention the speaker quoted from an editorial in the London *Lancet* of comparatively recent date.

As to medical societies, there cannot be too many of them. In no other country are they so numerous as in America. Abroad these societies are for the few; in this country they are for the many, and it is to their collective voice, speaking in no uncertain tones, that the profession owes the uplift of medical education.

The speaker then discussed the relation of the profession to the law. The passage of medical-practice acts has been urged by the medical profession, and physicians have been distinctly misunderstood in their attitude toward such legislation. Legislators feel in some way that the medical profession wishes to put a fence around the practice of medicine and that physicians, being on the inside, may fatten on it. This is not true. Physicians do not urge the passage of medical-practice acts for their personal aggrandizement, but simply to protect the people, to prevent the illegal practice of medicine by unqualified persons and by quacks.

If anything can be said in criticism of the medical profession in this country, it is the overweening inclination toward specialism. The physician should spend several years in general practice before adopting a specialty. Specialism has wrought great good for medicine, but the profession should see that it is not overdone. If a physician desires to acquire a broad general culture, it can only come from general practice. The selection of a specialty should, like matrimony, come naturally, and without being forced.

Abdominal Versus Vaginal Hysterectomy.—Dr. H. O. Walker, Detroit, Mich., read a paper on this subject. The question of the best approach surgically to the uterus and adnexa has not been settled, judging from the amount of discussion of late on this topic. Cancer of the uterus is not an infrequent cause of death in women. The recurrence of cancer of the uterus is very important and is immediately connected with the method of its removal. The manner of recurrence of cervical cancer is either by extension into the broad ligaments, vagina downward, and other contiguous parts, as the bladder and rectum, and occasionally the body of the uterus; or by metatases, through the lymph-channels and by distant direct implantation. The surgeon is to be governed by the method of operation that will offer the best advantages in avoiding a recurrence of the disease, and in order to illustrate the two routes he reported two interesting cases, in one of which he could not have operated as successfully by the vagina as through the abdomen. In the other case the vaginal route was indicated, and this operation was done. All things being equal, the abdominal route offers a more complete hysterectomy than the vaginal method. 1. The surgeon is better able to see what he is doing. 2. He can control hemorrhage more efficiently and completely than by the vaginal route, where he is working in a dark cavity. There is less liability of slipping of the ligatures, and if they should slip, they are reached more easily than by the vaginal section. 3. The danger to the ureters is minimized, and, if injured, the opportunity for their repair is much better; while if they are injured by the vaginal route, the surgeon would have to do an abdominal section to effect repair. 4. The prevention of sepsis is more certain by the abdominal than by the vaginal route, aided, in the former instance, by the Trendelenburg position, which gives opportunity for full protection of the intestines and peritoneum; while in the latter the opportunity for protection is limited, as it is an impossibility to secure perfect asepsis in the vagina where there has been a long-standing infective disease.

Cancer of the Uterus and its Treatment.—Dr. R. S. Sutton, Pittsburg, contributed this paper. Cancer operations should not be recommended as curative, but as palliative and therefore useful. Total vaginal extirpation of the uterus at or after time of climacteric, should find a place as prophylactic treatment against cancerous disease. This paper consisted of a compact review of the anatomy, pathology, diagnosis and present method of treatment.

The author expressed the opinion that treatment for existing cancer of the uterus had probably reached its complete evolution. In view of the ultimate results of this treatment, which he heartily endorses, because there is none other known to take its place, he asks the question, cui bono?

He then discussed the question of prophylaxis, and showed that the average age of his patients operated on was 43 years and a fraction, and claims that if these patients had all been subjected to total vaginal extirpation, at the average age of 40 years, all of them would have escaped cancer of the uterus; that according to his own statistics, but 4 per cent. of the cases would have died; whereas, nearly 100 per cent. of the cases did die, within a period of two or three years, after operations for cancer.

He urged greater attention to the early repair of lacerations of the cervix, and a more painstaking observation, and consideration by physicians at large of that train of symptoms preceding, and leading up to, the development of cancer of the uterus. He unequivocally recommends radical surgical treatment in all such cases, and clearly announces that if we are to diminish the number of uterine cancer cases, and consequent mortality in the future, it must be done in forestalling the disease.

In the discussion, Dr. Edward W. Lee, St. Louis, favored the abdominal route in the majority of cases, for the reason that it is easier of performance; the surgeon can see what he is doing; he has a more perfect control of the tissues, and can do a more thorough operation. The only condition in which he believes the vaginal operation is justified is in cases of small, uncomplicated fibroid tumors of the uterus which can be easily shelled out.

Dr. Chauncey D. Palmer, Cincinnati, said that until within the past few years the vaginal method was perferred to the abdominal. It is important in cases of cancer of the uterus that all of the diseased structure be removed; consequently this can be done more easily and thoroughly by the abdominal route.

Dr. J. Wesley Bovee, Washington, mentioned three classes of cancer of the uterus, where the removal of whatever other structures may be involved, is advisable. In very feeble patients, who are not able to stand a prolonged or tedious operation, he favors the combined method advocated by Ries, Clark, Werder and others. He has done the combined operation in thirteen cases, all of whom are living, with two recurrences.

Dr. A. H. Cordier, Kansas City, Mo., said, in cases in which there is extensive involvement of the cervix by the cancerous process, as involvement of the bladder and rectum, patients derive much benefit by a thorough curettage of the cancerous mass, then the Paquelin cautery, and packing of the parts with carbid of calcium. Along with this he uses the old Goodell injection (vaginal) of permanganate of potash.

Dr. Hugh A. Cowing, Muncie, Ind., urged upon the general practitioner the importance of making an early diagnosis of cancer of the uterus.

Dr. William F. Barclay, Pittsburg, thinks the general practitioner is blamable for not referring cases of cancer of the uterus early to specialists. For years he has made it a rule, when in doubt as to the diagnosis of disease of the uterus, particularly when the patient complained, to refer the case to a specialist, and has been satisfied with the results.

Post-Operative Internal Hemorrhage.—Dr. A. H. Cordier, Kansas City, drew the following deductions: 1. In diagnosing post-operative hemorrhage the history of the patient will aid much. 2. Symptoms of shock and hemorrhage are very similar. 3. In suspected cases a single stitch in the incision cut will tell. 4. In cases in which bleeding is anticipated, a tube should be used. 5. The surgery must be quick and decisive in these cases. 6. Large quantities of normal saline solution will save many cases. This should be used both per rectum and into the veins. 7. Strychnia, belladonna, etc., will not control bleeding from the uterine or ovarian artery any better than from the radial or temporal. 8. The surgeon should do what his surgical conscience tells him is right.

Intermittent Hydrops of the Knee.—Dr. George W. Cale, Springfield, Mo., reported the case of a woman 45 years of age. The first appearance of her trouble began five years ago. There was no history of injury. There was a rapid accumulation of fluid in the left knee-joint, but which was not painful. This disappeared in from one to four weeks, with or without treatment. The disease would recur at periods varying from one to six months.

Ventral Hernia Following Laparotomy.—This paper was read by Dr. B. Brindley Eads, Chicago. The occurrence of ventral hernia as a sequence of abdominal section is so common that it should command thoughtful consideration. The author urged the adoption of those methods which personal experience has demonstrated to be of the greatest use, both immediate and remote. He quoted Greig-Smith as saying that ventral hernia is a mere stretching of scar tissue, but the essayist regards it as a stretching, not only of the scar tissue, but of all of the tissues of the abdominal wall at the site of its occurrence.

As intact innervated muscular fiber is the only safeguard against hernia following laparotomy, the first rule is to make the abdominal incision parallel, or nearly so, with the direction of the motor nerves, and of the most important muscular fibers supplied by these nerves. In considering the incision the following points must be taken up: 1. The length is largely dependent on the thickness of the superficial fascia; it must be sufficient to allow free access to the muscles whose functional integrity is essential to success. 2. The length must be relatively greater than when muscular fibers are to be separated instead of divided. 3. It must vary with the pathological condition for which the operation is performed. 4. An opening of sufficient size must be secured for thorough exploration and to obtain the requisite degree of precision and rapidity in manipulation. 5. A long incision through the skin and superficial fascia does not predispose to hernia. 6. It lessens the mortality by providing ample space for the protection of surrounding viscera. 7. It lessens shock by diminishing the time required for the operation, and also the duration of the anesthesia.

Several incisions were mentioned by the essayist. The difficulties he has experienced in reaching the appendix through the McBurney incision in acute suppurative cases of appendicitis have caused him to devise another method of approach in a more dependent part. This incision overlies the outer border of the cecum and leads directly to the appendix. It is slightly curved outward and downward, crossing an imaginary line drawn between the anterior superior iliac spines. The center of this curve is from an inch to an inch and a half to the inner side of the right superior iliac spine. The skin and superficial fascia are incised for about two inches. This freely exposes the aponeurosis of the external oblique, which is separated by means of the dry dissector, or the handle of a scalpel, in the direction parallel to its fibers, and well retracted. This brings into view the transversely arranged fibers of the internal oblique and transversalis muscles, and the twelfth abdominal, ilio-hypogastric, and possibly the ilio-inguinal, nerves which are in turn retracted in order to reach the transversalis fascia, which, together with the peritoneum, is divided transversely. The advantages gained by this incision are: 1. It provides easy access to the diseased area. 2. It enables the operator accurately and securely to protect the peritoneal cavity from infection. 3. It lessens liability to breaking down the inner limiting wall of adhesions. 4. It affords a better opportunity to open the abscess cavity from the outer side. 5. It favors drainage. 6. It has not been followed in the author's experience either by appendicular fistula or post-operative hernia.

Gangrene of the Scrotum and Penis.—Dr. E. H. Richardson, Atlanta, Ga., narrated the history of a case which showed the initial lesion to have been an abrasion of the skin near the os pubis, with probably infection from the erysipelatous cocci at this point, and later a mixed infection from the streptococcus of gangrene, terminating in the destruction of the gangrenous process of the entire integument of the penis and of three-quarters of the scrotum. A plastic operation was made, with the result that the integument of the penis and testes was preserved. The patient made a perfect recovery.

Tracheloplasty.—Dr. Henry N. Newman, Chicago, read a paper on this subject. In order to maintain a condition of normal health in the body, it is necessary that all of the organs properly perform their functions. The author calls attention to the great importance of the function of the cervix uteri in relation to disease in women. In former times cervical lesions were recognized as a fruitful source of gynecic evils, and many operations and instruments were devised for their correction. Emmet's trachelorrhaphy, once so popular, has ceased to be adaptable to the needs of to-day in repairing cervices. Dr. Emmet, in conceding this himself, and offering amputation as a substitute, states that the great advance in the obstetrical art and the methods of caring for a lacerated cervix in labor have altered the character of surgical pathology, so that trachelorrhaphy, as formerly practiced, is rarely called for.

The author finds the indications for plastic work on the cervix still widespread enough to justify the presentation of a new method of operating. This he calls tracheloplasty, it being plastic work designed not only to restore normal contour and relation, but to re-establish proper function. The distinctive features of the methods are the use of a specially designed knife, the shape of the flaps in the anterior and posterior lips of the cervix, clean, smooth-cut surfaces, accurate approximation of flaps, the certainty of restoring the proper lumen of the canal, and the simplicity of the after-treatment. Neither tracheloplasty, nor any one operation of the kind, should be relied on to correct all the ills which accrue from lacerations in child-bed. It is frequently necessary to do such simple work as shortening the round ligaments, or suspensio uteri, where there is a displacement of the uterus; divulsion and curetting where disease has extended to the endometrium above; reparation of the pelvic floor where, through relaxation or trauma, there is a hernial condition of the rectum, bladder, vagina or superimposed viscera; sometimes even the opening of the abdomen for plastic work, or resection of pathological conditions of the ovaries, tubes, etc. Any one or two of these accesory operations may be necessary to restore the patient, although the disease or deformed cervix may have been the essential, perhaps the sole, etiological factor in the case.

Middle-Ear Disease in its Relation to the Cranial Cavity.—Dr. O. J. Stein, Chicago, read a paper on this subject, in which he pointed out the necessity of recognizing the importance of possible intracranial complications in every case of middle-ear disease. The various avenues of infection were dwelt on at length, these being illustrated by beautiful drawings and specimens. The symptomatology of intracranial phlebitis, thrombosis and abscess was discussed, and several instructive cases reported. In connection with this paper, Dr. J. Holinger, Chicago, gave an interesting stereopticon demonstration.

Address in Medicine.—Dr. I. N. Love, New York City, selected for his subject, "Nutrition and Stimulation." Continuance of life, beginning with the original protoplasm, the cell, depends on proper nourishment. The recognition of this fact is essential in all the work of the physician. The proper nutrition of the new being, from the very beginning, prior to birth, should be carefully looked after by the careful physician. After birth the security of the infant depends on the proper appreciation of its proper feeding. From infancy to maturity this should be the essential thought of the parent and the doctor, who should ever realize his importance as the helper of the parent in the building-up of a complete man or woman. The entire scheme of tissue-building, of repair, of maintenance of the mechanism of the human body involves not only nutrition, but perfect elimination, and the two together are expressed in the term metabolism. Interrupted metabolism tends toward organic disease, and finally death. Perfect metabolism means perfect health.

Stimulants are of value, if used in the right way and at the right time. In the healthful condition they are not needed. They are essentially a luxury. All luxuries should be used with the greatest care, and only the thoroughly healthy can indulge safely in luxuries. Stimulants are divided into two classes, namely, those that are exclusively remedial, and those that come under the head of luxuries associated with every-day life. Of all the stimulants, alcohol stands first. It is probably the most prompt diffusible stimulant we have. There are arguments for and against alcohol as a food.

Coffee and tea are essentially domestic pleasures, and while seemingly harmless, they are potent whippers-up of energy and should be used with great care. Tobacco has never been thought of as a food. It is primarily a stimulant, but, like all other stimulants, it is secondarily a depressant. It is a luxury, pure and simple. Morphin, cocain and others of their class are of great value to the profession, but improperly used are more deadly in their effects than the scalpel in the hands of the unskillful.

Treatment of Perirectal Abscesses.—Dr. John L. Jelks, Memphis, Tenn., read a paper on this subject. Rectal abscesses, when properly treated, are not so serious as when it was the practice to use poultices and await pointing. These abscesses need not result in fistulæ, unless they are the result of malignant diseases, as tuberculosis, cancer and syphilis. The fault to be found in a simple incision and drainage of these abscesses is that their walls are not gotten rid of; hence this barrier to general infection or infection of other and deeper structures remains to continue an irritation and to cause suppuration. In many cases the abscess wall becomes calloused, and all efforts to establish granulation are futile. When he is able to elicit fluctuation, he opens freely and hastily irrigates through an irrigating curette, attached to a fountain syringe, until the irrigating fluid comes away free from debris; then with a sharp irrigating curette he removes all of the abscess wall, thereby converting the cavity into a surgical wound. He uses formalin solution in irrigating these cavities and packs them with iodoform gauze. After thus treating these cases he expects no further suppuration. Since using formalin solution in irrigating these cavities he has, in the after-treatment of them, seldom noticed any suppuration.

Superficial abscesses should be dealt with in the same manner; or they may be frozen and excised as the surgeon would a tumor. They are, when otherwise treated, liable to infect deeper structures. Local anesthesia will suffice, and curettage can be properly practiced with it. If the wound is painful, or the formalin solution irritating even when very dilute, antibrule in 50 per cent. solution is to be preferred. In rectal surgery he has not found the objections to the use of formalin which have been referred to by rhinologists and laryngologists.

Simple Operation for Hemorrhoids: Enucleation.—Dr. J. Rawson Pennington, Chicago, contributed this paper, which was profusely illustrated. He gives a cathartic the second night before the operation, a saline the following morning and a bath, and colonic flushing the night before. The next morning he gives an enema of from one-half to one pint of cool water, and operates two hours later. He emphasizes the importance of carefully examining the entire rectum. He grasps each anal quadrant at the muco-cutaneous junction with a pair of forceps; the anus is everted, and the internal tumors exposed. Seizing with the hand the forceps attached to the posterior quadrant, he fully everts it, and, with a pair of scissors curved on the flap, cuts off the redundant membrane only, which is usually about one-third or one-half of the uppermost part of the hemorrhoidal node. This permits the blood in the tumor to escape. All of the angiomatous tissue is carefully removed, when the remaining wall collapses. Each quadrant in regular order is treated in a like manner. A stream of hot sterilized water flows over the field continuously during the operation. Spurting vessels, if any, are caught with forceps and thoroughly twisted. Should this fail to control hemorrhage, he throws a ligature around the vessel and ligates it. The operation having been completed, he introduces a rubber-covered tampon, which has been fully described in previous articles by the author.

The advantages of this method are: There are no stumps to slough, nor nerves caught and squeezed, which will cause excruciating pain, as when the ligature is used; nor are the nerves and tissues burned to a crisp, as when the clamp and cautery are employed. The formation of stricture is obviated.

The patient is given a cathartic and the tampon painlessly removed at the end of forty-eight hours. There is no pain nor bleeding with the movement of the bowels. After the bowels have moved the patient is instructed to keep them soft for two or three weeks by taking compound licorice powder or Apenta water, the latter being very palatable and effective. He has performed this operation in fifty cases, with more satisfactory results than he has obtained by any other method.

Obstipation.—Dr. Sterling B. Taylor, Columbus, Ohio, read this paper. Obstipation was defined, and a comparison of obstipation, constipation and costiveness made. The causes of obstipation were dwelt on and classified. Hypertrophy of the rectal valve was emphasized as the usual cause of obstipation. The essayist defended the views of Martin and his method. The symptomatology of the affection and palliative and radical treatment were discussed, the author closing his paper with the citation of several cases.

Tuberculosis of the Spine.—Dr. Alexander C. Wiener, Chicago, contributed a paper on this subject. He made a plea for early diagnosis before deformity is noticeable. Extension and hygienic treatment are essential in avoiding complications, such as paresis and gravitation abscess. He exhibited a specimen which illustrated the possibilities of forcible correction of the spine. He narrated cases of psoas abscess in which he had effected a cure with injections of concentrated carbolic acid.

Medical and Surgical Treatment of Acute and Chronic Cervical Lymph Nodes.—Dr. Horace H. Grant, Louisville, dwelt on the purpose and function of the lymphatic glands. He showed how they may be rendered useless and harmful by disease and disintegration. He pointed out the limitations of medical and expectant treatment, and outlined the indications for the various surgical procedures.

Address in Surgery.—Dr. Charles A. Wheaton, St. Paul, chose for his subject "Fulminating Appendicitis." He said that every case of appendicitis is and by rights ought to be considered surgical, because the surgeon's training specially qualifies him to best interpret the meaning of the symptoms encountered. Every case of so-called fulminating appendicitis should be operated on as soon as its distinctive characteristics are known. High temperature and accelerated pulse, associated with local pain and rigidity, are strong presumptive evidences of malignancy in the attack, and if associated with vasomotor disturbances, are practically proof positive of perforation. The surgeon who refuses the only chance that drainage may give even the most desperate cases is false to himself, and fails materially in discharging his obligations to his patient, obligations which the patient has a right to expect at his hands. A puncture in the median line, in the loins or, in a woman, in the posterior cul-de-sac, under local anesthesia, does not add to the danger of the condition, and it materially aids nature in the awful up-hill fight. In short, in every fulminating case, operate first and philosophize afterward.

Pulmonary Tuberculosis in Infancy and Childhood.—Dr. Frank P. Norbury, Jacksonville, Ill., said that this disease is not a rarity among children, as the utilization of available post-mortem material shows. Heredity is of etiological importance, but it has lost its prestige as compared to its former standing. Modern scientific inquiry has shown that infection is the etiological factor par excellence. Direct heredity can account for a limited number of cases. The infection theory is proved by the lateness of the appearance of disease; few cases occur during the first year of life, and steadily increase thereafter. The mode and route of infection are important considerations. Northrup, Carr and others have shown that tuberculosis starts more frequently in the thorax than elsewhere. Pulmonary affections, such as whooping-cough, influenza, etc., create favorable conditions for infection. Enterocolitis and gastroenteritis create portals for intestinal infection. Milk is a source of infection; likewise tuberculous meat.

The diagnosis may be confounded with cases of malnutrition. Bovaird says two evidences of early invasion are "progressive emaciation, not explained by other disease; continued elevation of temperature similarly conditioned." Differential diagnosis from bronchopneumonia can be made only by laboratory methods. Acute miliary tuberculosis and bronchopneumonic tuberculosis are most frequently found in infants and children.

The complications are meningitis, empyema, and involvement of bones. The prognosis is grave in most all cases, but lesions of lungs may heal under favorable conditions. With reference to treatment, prophylaxis during infancy should include attention from birth, if mother is tuberculous; also good hygienic, open-air treatment; climatic change, when possible. The symptomatic care should be the same for children as for adults. Good nutrition should be maintained, and as little medicine given as possible. Creosote is recommended by the author, also simple tonics.

The Physician as a Sanitarian.—Dr. Hugh A. Cowing, Muncie, Ind., read a paper on this subject in which he discussed preventive medicine; hygiene of infection; the physician as a factor in the spread of infection; the physician and the health officer; health legislation, and the physician and the public schools.

The Philosophy of the Science and Art of Medicine.—Dr. William F. Barclay, Pittsburg, said that thoughtful minds should be engaged in ascertaining truth from falsehood. True and false philosophy should be appropriately applied to results obtained in rational conclusions. The philosophy of medicine is the comprehension of the truth in the investigation of the science, enabling one to arrive at rational conclusions in the study of physical laws which govern organized matter in their normal and pathological condition.

Curability of Inebriety by Medical Treatment.—Dr. T. D. Crothers, Hartford, Conn., said that inebriety is a neurosis, usually self-limited, and very largely curable. The craze for drink is symptomatic. The real causes are central nerve irritation, exhaustion, poisoning and starvation. The success of the treatment depends on accurate knowledge of the causes and conditions present in each case, and the accurate application of general means and measures for their removal. Each case requires special means and measures, particularly adapted to meet the conditions present. The family physician as well as the specialist should treat these cases successfully.

Further Observations on the Clinical Application of the Suprarenal Capsule.—Dr. W. H. Bates, New York City, regards the aqueous extract of the suprarenal capsule as the most powerful astringent hemostatic and heart tonic known to the profession. It lessens congestion of the eye and of other organs. The extract is not irritating or poisonous, and, unlike other powerful drugs, is never in his opinion contraindicated. In short, the profession has no remedy which is so useful in all forms of inflammation.

Clinical Value of Purgative Mineral Waters.—Dr. Edwin Rosenthal, Philadelphia, discussed this subject. He spoke of natural and artificial mineral waters; simple, thermal, common salt, or muriated waters. He dwelt on the waters mostly met with in commerce, spoke of their chemistry, names, mode of action, uses, method of selection of a special purgative water, etc.

What the Law Requires of a Surgeon.—Dr. Dudley S. Reynolds, Louisville, stated that a surgeon must possess a reasonable familiarity with the science of his profession; he must exercise reasonable skill for the locality in which he practices, and must devote due diligence and care in attending to his patient. If the patient declines to submit to that treatment which in the judgment of the surgeon is most appropriate, and he does not abandon the case at once, he assumes liability for the result of failure to do that which in his judgment was best for the relief of the patient.

Differential Leucocytosis.—Dr. L. H. Warner, Brooklyn, read this paper. Experiments in recent times have given us a better insight into elucocytosis. It has been demonstrated to be due to three causes—digestion, inflammation and infection. Physiological and biological experiments have proved that by means of medication a true picture of leucocytosis may be produced, but which in reality represents leucocyto-diuresis, a condition very desirable in the treatment of disease and a recognition of which is of the greatest value when hematology is called on to aid in arriving at a correct diagnosis.

The following officers were elected for the ensuing year: President, Dr. A. H. Cordier, of Kansas City, Mo.; first vice-president, Dr. Charles F. McGahan, of Aiken, S. C.; second vice-president, Dr. Charles L. Minor, of Asheville, N. C.; secretary, Dr. Henry E. Tuley, of Louisville, Ky., re-elected; treasurer, Dr. Dudley S. Reynolds, of Louisville, Ky., re-elected.

Put-in-Bay, Ohio, was selected as the next place for holding the meeting; time, September, 10-12, 1901. Dr. J. C. Culbertson, of Cincinnati, Ohio, was selected as the chairman of the committee of arrangements. The meeting ended with a banquet at the Battery Park Hotel, given by the Buncombe County Medical Society.

TAKING COLD AND LA GRIPPE.

This is the commencement of the season which will last for at least six months when colds, catarrhal fevers, influenzas or grip will abound. At this time when one has been feeling uniformly in a most excellent condition, there may suddenly appear feeling of lassitude followed by a decided chill or chilliness, a sudden and rapid rise of temperature, quick tense pulse, moderately dry skin, great thirst, coated tongue, constipated bowels, an unpleasant taste in the mouth, general evidence of checked or perverted secretions, and last, but not least, scanty high-colored urine.

A not infrequent symptom will be a general aching in all the muscles, joints and bones, suggesting the old-fashioned "breakbone" fever. The above group of symptoms may be the explanation of "only a cold," as it is frequently expressed, or it may be the announcement of a well-defined attack of grip, which now is well known to everybody. It may be intertesting to recall that the grip or old-time "influenza" is due to a specific poison, the bacillus of Pfeiffer, which, while it is claimed by some to be uninfluenced by soil, climate, season or atmospheric changes, yet these conditions do materially affect the individual as related to susceptibility.

There is much yet to be learned regarding the manner of development of these remarkable outbreaks of influenza. It has been definitely established that with this infection one attack does not carry with it immunity against another as in most other infections, but rather invites or predisposes to repeated attacks.

Careful physicians who have studied this disease and allied conditions, are uniformly of the opinion that it is one of the severest tests of the equipment of the individual, particularly one who has reached forty years of age. These so-called colds, catarrhal fevers and influenzas are not only in themselves often of serious import, but doubly so in that they put the individual nervous system below par, figuratively speaking, reduce the power of resistance, render the air passages sensitive and susceptible to other infections; in other words, their victim is in a condition to yield readily to all forms of disease.

The all-important thing then is for the invaded person to at once institute a treatment favorable to prompt relief and cure. Fortunately synthetic chemistry has given us a remedy in Phenalgin, which can be absolutely relied upon. In adult doses of ten grains washed down by a good hot toddy at night (to be repeated in an hour if necessary), a prompt relief to all discomforts will be secured. The action of the phenalgin is not only to relieve pain and distress, but to open up the excretory organs and correct the general perversion of secretions as indicated by the bad taste in the mouth, etc. In the morning unless the bowels have sufficiently moved, a teaspoonful or two of sulphate of soda may be given in a glass of hot water to flush them more thoroughly. It may be well to continue the phenalgin in five grain doses every three or four hours for several days, to be followed later by a tonic composed as follows: Capsicum, 1 grain; quinine, 2 grains, and strychnine, $\frac{1}{50}$th of a grain, in a pill or capsule three times a day.—*Popular Science News.*

AN IDEAL PHARMACEUTICAL COMBINATION FOR CHLOROSIS, ANEMIA, ETC.

Hannon first proved the presence of manganese in the blood, and called attention to its high importance to the oxygenation of the latter. He distinguished three kinds of chlorosis:

Chlorosis from insufficiency of Manganese.
" " " " Iron.
" " " " Iron and Manganese.

The celebrated clinical physician, Geheimrath Prof. Dr. Ruehle, of Bonn, continued this investigation. Both endeavored to introduce manganese together with iron into the *materia medica,* but the inorganic nature of the compounds employed by them, moreover in the indigestible form of pills, did not give the success expected; manganese, as a remedy for chlorosis, fell into disuse, and almost exclusive attention was given to iron.

It is a well-known fact that the chemical action of manganese as well as iron in the red-blood corpuscles manifests itself in the property these metals possess of absorbing or occluding oxygen, this absorbing power being much greater in manganese than in iron. Thus in the sesquichloride of iron only one-third of the chlorine present is less firmly combined with the metal than the rest; this third exercises an energetic chemical effect similar to that of free chlorine. In the highest chloride of manganese one-half the chlorine is in this condition, and is released even at an ordinary temperature; this is not the case with iron; therefore, by reason of this easier liberation from the molecule, manganese excels iron in chemical energy.

The oxygen compounds of these metals bear a similar character.

Manganese is therefore quantitatively more effective than iron, in the proportion of manganese 35, iron 21. As a constituent of the blood its ozonizing power is greater than that of iron, and it thus exercises a more strongly oxidizing and more energetically assimilative effect.

Experience has proven that metallic iron does not agree with the system. By the chemical action of the muriatic acid present in the gastric juice, hydrogen is developed, which is always accompanied by a certain amount of carburetted hydrogen, arising from the carbon present in all iron, a very noxious gas, occasioning nausea and vomiting on the part of the patient. Iron forms two oxygen compounds, viz., an oxide resp. peroxide and a suboxide; the chlorine compound formed by taking metallic iron corresponds to the suboxide, however, not this latter but the peroxide compound is absorbed by the digestive organs. True, a peroxide is now gradually formed at the expense of the oxygen and the muriatic acid present in the stomach, but thereby the amount of this acid required for the digestive process is withdrawn from the stomach, causing loss of appetite and indigestion.

To overcome this difficulty solutions of the peroxide of iron compounds of iron have been used, but the administration of these compounds is unadvisable, on account of their astringent and acid properties; they corrode the teeth, and check the secretion of gastric juice by the contraction of the glands, causing indigestion and constipation. The action of the manganese and iron salts not in solution is a similar one; they also deprive the stomach of muriatic acid, and so does the saccharated peroxide of iron (Eisenzucker), a preparation of which has already been introduced in the form of a tincture.

From the foregoing it is evident that the inorganic compounds of manganese and iron, whether as suboxides or as soluble or insoluble oxides, resp. peroxides, are not suited for medicinal use.

For a long time, therefore, efforts have been made to find a better medicinal preparation of iron. The favorable influence exercised by a diet of raw meat upon the health of chlorotic patients is well known. Unhappily a meat cure can be attempted in but few cases, medical advice being usually called in at such an advanced stage of the disease that the patient exhibits not only a lack of appetite, but a positive repugnance to meat. The red color of such meat is due to the presence of iron; this naturally prompted the wish to find a chemical compound containing the iron similarly combined as in its organo-plastic form—*i. e.*, meat.

The Albuminate of iron was discovered, which, though having good remedial effect, has likewise a serious defect—its cloudy, dirty-brown appearance. It causes disgust to sensitive patients, it is liable to decompose, forming a thick jelly, and moreover it requires to be digested by the stomach.

These circumstances at length led to the preparation of "digested" albuminous compounds of iron, the "Peptones," which, while fulfilling all the requirements of preparations of iron, still lack the chief factor as a specific for chlorosis, namely, Manganese.

After long and laborious experiments, Gude & Co. succeeded in uniting in their Pepto-Mangan "Gude" all the advantages which a specific for chlorosis should possess, and in avoiding the defects mentioned. Gude's Pepto-Mangan is no simple solution of Manganese and Iron peptonate, but a highly scientific combination, a medicinal compound of a mildly aromatic, non-astringent taste, pleasing to the eye in its wine-like appearance. In this form it does not possess the astringent effect of the inorganic salts of these metals (which have been recommended as imitations of this preparation) upon the glands of the stomach, and (being free from the mineral acids of the other) does not affect the alkalinity of the bowels. This preparation, immediately on passing through the alimentary ducts, is taken up by the blood, and can therefore never be a burden to the stomach or disturb the digestion, as the administration in serious cases has amply proved. Usually after taking it for a week its restorative influence on the functions of the stomach is felt; appetite reappears, and the general health is improved by the increase in bodily warmth, an effect directly due to manganese. After from four to six weeks' use a considerable increase in weight has always been observed.

Adults. A tablespoonful three to four times daily, either alone or in a sweet wine (red wines having tannic acid are precluded), or in milk.

For further particulars refer to:

Article by Dr. H. P. Loomis (N. Y. Academy of Medicine) in N. Y. Medical Record, June 3, 1893.
American Medico-Surgical Bulletin, July 4, 1896.
Denver Medical Times, April, 1894.
New England Medical Monthly, February, 1893.
N. Y. Journal of Balneology, September, 1892.
Berlin Deutsche Medizinalzeitung, 1880, No. 80.
Berlin Allgem. Medizin. Centralzeitung, November 16, 1889.
Aerztlicher Centralanzeiger, 1889, No. 42.
Med. Chir. Centralblatt (Vienna), 1891, No. 41.
Pharmaceutische Rundschau (N. Y.), November, 1891.
Aerztlicher Centralanzeiger, No. 23, 1892.
Allgemeine Wiener Med. Ztg., No. 44, November 3, 1891.
Medical Record, New York, June 3, 1893.
New England Medical Monthly, May 4, 1894.
New York Medical Journal, December 15, 1894.
New York Medical Journal, February, 9, 1895.
New York Medical Journal, December 7, 1895.
New York Medical Journal, June 26, 1897.
Chicago Medical Recorder, May, 1896.
Chicago Medical Record, May 5, 1897.
American Therapist, March, 1896.
Therapeutische Monatshefte (Berlin), May, 1897.

Medical Times, February, 1898.
New England Medical Monthly, Danbury, Conn., February, 1898.
St. Louis Medical and Surgical Journal, February, 1898.
Medical Herald, St. Joseph, March, 1897.
The Woman's Medical Journal, October, 1897.
Medical Standard, October, 1897.
Memphis Medical Journal, March, 1897.
Southern Practitioner, Nashville, Tenn., January, 1898.
Texas Medical Journal, February, 1898.
The Canadian Journal of Medicine and Surgery, February, 1898.
St. Louis Medical Review, Jerome K. Bauduy, February 26, 1898.
Medical Record, New York, June 25, 1898.
Maritime Medical News, Halifax, N. S., July, 1898.
St. Louis Medical Era, July, 1898.
Virginia Medical Semi-Monthly, Dr. Stuart McGuire, August, 1898.
Alabama Med.-Surg. Age, August, 1898.

BLOOD CURE OF TUBERCULAR LARYNGEAL PHTHISIS.

By T. J. BIGGS, M.D., Stamford, Conn.

Peter M———, aged 33, Irish, admitted October 29. Diagnosis, laryngeal phthisis. The case was sent to me by Dr. S———. Examination showed it to be a well-developed case of tubercular laryngitis, presenting the following symptoms: Almost entire loss of voice, patient anæmic, generally debilitated, cough of an irritating and painful character, associated with slight expectoration, painful and difficult deglutition. There was a remitting fever with slight night sweats, loss of appetite, loss of flesh, insomnia; laryngoscopic examination revealed the characteristic broad, shallow, irregular, grayish ulcers, with the thickened surrounding mucous membrane. The vocal chords showed infiltration, thickening and some ulceration. There was also redness generally of the mucous membrane showing here and there scattered tubercles. The ulcers were covered with a grayish exudate. The mucous tissues around about the ulcers was thickened. So advanced was his condition that I gave the patient but little assurance of anything like a favorable result. The patient was put to bed in an isolated room, a tablespoonful of bovinine given every two hours in milk, and a light general diet. Every three hours the larynx was thoroughly cleaned out with bovinine and hydrozone; following that, iodoform-bovinine was sprayed in.

November 5 bovinine was ordered, a wineglassful every three hours; and, the ulcers now beginning to heal, it was decided to substitute bovinine pure for iodoform-bovinine, as a spray, but the cleansing process was continued as before.

November 12 the patient began to feel stronger and slept better, had no night sweats or abnormal temperature, appetite was good and the voice somewhat clearer; swallowing and talking did not produce as much pain as at first.

November 21 the ulcers, with the exception of one, had entirely healed, and that one was doing nicely. Treatment continued.

November 28 the remaining ulcer had healed, the inflammatory condition of the membrane had disappeared, no tubercles were visible; patient's voice had been almost restored to normal. General condition splendid. It was deemed wise to continue the treatment a short time longer. December 3 the patient was discharged, cured, with the voice absolutely restored.

As the prognosis in the condition is invariably unfavorable, and as this case was one of the worst I had ever seen, I think that the result obtained here was a most remarkable one and presents much food for deep thought. Never, in my experience before had I seen a similar case to this do anything like as well under other treatment.

GAILLARD'S MEDICAL JOURNAL.

A MONTHLY JOURNAL OF MEDICINE AND SURGERY

Scientia et Veritas Sine Timore.

PUBLISHED BY THE NEW YORK MEDICAL PUBLISHING CO.,
116 Nassau Street, NEW YORK.

All communications, of either business or editorial character, should be addressed to Gaillard's Medical Journal, 116 Nassau St., New York.

Articles for publication will be received with the understanding that they are contributed exclusively to this journal. Reprints will be furnished at actual cost, orders for which should accompany the manuscript. Authors of accepted articles may receive twelve copies of the issue in which they are published. Necessary illustrations will be furnished without expense to authors when suitable drawings or photographs are furnished.

EDITORIAL.

Tuberculosis Edition.

The world is aroused on the subject of tuberculosis and the medical profession is aggressively grappling with the problem as never before. Its importance justifies GAILLARD'S in giving great space for its thoughtful consideration.

In a recent special edition devoted to this subject the *Journal* (A. M. A.) says:

Probably nothing has stirred up the medical profession at any time during the past century as has Koch's discovery of the tubercle bacillus. The disease we have had always with us and the suspicion of its communicability was not new, but this scientific confirmation of the facts and the practical deductions therefrom have amply warranted enthusiasm. We know now that tuberculosis, which is responsible for so large a proportion of human mortality, is an infectious disorder, and what is still more valuable knowledge, that it can be recognized in its early stages while still curable and that it is to a certain extent preventable. It is natural that, under these circumstances, enthusiasm should be aroused and sometimes extravagance be indulged in even by medical men in their estimation of the dangers of infection. Very little, however, if any, of this tendency will be met with in the papers in this issue.

There are yet many points to be cleared up in regard to tuberculosis, and it may be that some of our present views as to its mode of infection may have to be modified in some respects, but it can safely be said that the papers in this issue fairly represent the present consensus of opinion in regard to it. The more hopeful views of the disease are gaining ground and it is possible that in the future more stress will be laid on constitutional and environmental and less on the bacteriologic factors in its etiology. If we are to accept the statements and views of some modern writers as to the prevalence of cured and latent or quiescent phthisis we must admit that the bacillus tuberculosis is not as dangerous an organism as it has come to be believed by the public, and our efforts directed to strengthen resistance must be generally considered as of more importance than those aimed at merely restricting the infection. One thing seems reasonably certain; pulmonary consumption is, at least locally, on the decrease. This is shown by Dr. Hinsdale's paper in this number, in which he reports a decrease of the percentage of deaths from pulmonary tuberculosis to all deaths in the city of Philadelphia from 14 to 10 per cent. in fifteen years. Other cities, such as Berlin, where statistics are reliable, show a similar decrease, and in spite of possible criticisms, it must be admitted that the registrar-general's statistics for Great Britain give similar testimony. It should be remembered in this connection that with a decrease in the general death-rate there might very easily be a proportionate increase in that from consumption, with an actual decrease. But both the actual and the relative mortality are reduced.

There is much yet to do before consumption ceases to be the "great white plague," the one pre-eminent scourge, but the outlook is now more hopeful than ever before. The public has already received rudimentary education on the subject—a little one-sided, perhaps, in some regards, but nevertheless one on which to build a more complete and perfect body of information. The occasional, somewhat too hysterical manifestations of some of the antituberculosis agitation are only a temporary phase of the progress toward the desired end—the restriction if not the eradication of the disease among men.

* * *

The number of hospitals for tuberculosis is increasing rapidly, not only abroad but in this country. In places where special hospitals have not been possible, wards or wings of general hospitals have been set aside for tuberculous patients. While a special hospital is certainly best, it is unquestionably true, that special wards are better than general mixing of patients. It seems to be true that infection with tuberculosis is much more apt to occur where contact is continuous than where it is casual.

In order to get the best, or even satisfactory results from hospitals, it is necessary to specialize. There should be hospitals for advanced cases of tuberculosis, and others for the cases that promise more from treatment. The question arises: Why should we erect hospitals for the hopelessly sick? The good that they do cannot be shown by statistics. The patients usually come from crowded homes and insanitary surroundings. They often come from bedrooms occupied by several people. They pass the day-hours in yards or work places, where there is little sunshine and much moisture. Such a patient at home is a constant menace to his family and source of some danger to others. This is the great good that these hospitals accomplish. There are lesser benefits. Many people remain in a hospital a short time and return to their friends. If they remain even a short time they are taught the care of the sputum, the necessity for sunlight and general hygiene, and much good for the community has been accomplished. The cures in a large hospital will never be very much of a factor. Even when cured, the patients will seldom get on such a physical plane as will make them useful to their families or to society.

The second class of hospitals for tuberculosis is the sanatorium for the incipient-stage group. Many hospitals concentrate their efforts as much as possible on those cases of tuberculosis that can be cured and restored to usefulness. Several of the articles in this symposium and the accumulated experience of hospitals in many countries show that from 25 to 60 per cent. of people with tuberculosis who are properly treated are cured. When cured, they are strong enough to take their places among the bread-winners or the home-makers.

While the climate of the West and of the mountain districts of the East is especially beneficial, the possibilities of sanatoria are not limited to those districts. Sanatoria in those regions that are supposed to be unfavorable for the cure of tuberculosis show an excellent percentage of recoveries. Porches, verandas, wind-shields, solariums, etc., can in a great measure replace the conditions found in more favored locations. Some of these hospitals have been built by states or municipalities, some by private charity, and others as business propositions. Each source is legitimate and proper. The duty of the state to cure where it can is no less urgent than it is to care for those that are helpless. The article by Mr. Scruggs covers the point of right, though it is clear that a state has the right to do whatever is its duty.

Unquestionably hospitals will be built on the lines advocated by Dr. Oliver, namely, small hospitals for small communities—serving as sanitary homes for those having tuberculosis to an incurable degree, and being havens of hope for others.

Home Treatment of Tuberculosis.

The profession is to be congratulated on the progress made in the study of tuberculosis during the last few years. Through better knowledge of the subject, more people recover from the disease, an earlier diagnosis is made in many cases, and a more rational care of the patients has come about. The modern sanatorium management, too, we may well believe, offers the best chances for recovery and is destined to still further reduce the general mortality.

But most patients are unable to pay for institution treatment and the state can never hope to provide sanatoria for half of the indigent cases, even if they were all willing to go to them, which is not the case. There will always be a large number of people who will sicken with consumption and recover or die from it at home. These must depend, in the main, on the assistance of their family physicians. Are these physicians doing as well as they can for such cases? Are such cases having as good a chance for their lives as their circumstances and surroundings make possible? We think it is only fair to answer each of these questions in the negative. Physicians are too often careless as to details of hygienic management, on which the life or death of the patient depends. Some seem never to have learned that benefit can come of such measures. Most such patients have no carefully ordered hygienic management, except that which they devise themselves. They are given medicines, usually tonics, such as strychnin, iron, quinin, cod-liver oil and whiskey, all of which in their way are beneficial. They are admonished to eat and to cut down or stop their work, both of which they do in a most empirical and unscientific way. Every patient ought to receive from his physician a carefully prepared schedule of regimen, written out minutely if need be, and to be observed continuously. It should cover all details as to the number of hours daily to rest, and how to do it; the methods of rest out of doors; the kind of room and bed to sleep in; the ventilation for both night and day; the character and amount of exercise; the way to be clothed; the food for each meal, and the number of meals each day—more than three—and the hours they are to be eaten; the care of the stomach and bowels; and the management of amusement for mental tranquillity.

How many cases in a hundred ever have such attention? Yet the life of many a consumptive depends on avoiding some indiscretion which such rigid rules might prevent, and it is attention to just such details as these that makes the remarkable records of the sanatoria. Is it impossible to give the average case some fair approach to such efficient services at home? We prefer not to believe it. The people are ignorant and not to blame if they fail. The physician knows the value of these measures and is responsible. He ought not to evade his responsibility. The home treatment of pulmonary tuberculosis, we believe, not half as effective as it might be made, and ought to be.

The Hall of Fame—No Doctors Admitted.

The Hall of Fame, established by the money of the great railway and money magnate, Jay Gould, has had its first list of inmates selected by the committee, composed almost exclusively of college presidents and members of the bench and bar, and as might have been expected nearly all chosen were men of letters or lawyers, the only exceptions being soldiers, clergymen and inventors; not a single physician was in the number—a gross outrage against the most useful, philanthropic, self-sacrificing and able body of America's workers.

Appropos to the subject of tuberculosis, *Love's Medical Mirror*, of St. Louis, has instituted a prize essay contest, offering a series of prizes aggregating $1,000 for the best essays on this most important question. A committee of eminent medical men representing the various sections of the country has the matter in charge, among whom we note Surgeon-General Wyman, Dr. Wm. Osler and Dr. J. M. Mathews.

EDITORIAL NOTES.

The election with all of its excitement has closed the great Presidential campaign with all of its noise, bustle, bombast and bomb-bursting business and the people can now settle down to earnest work.

Probably it is essential to the best good of popular government that frequent opportunity be given the people to change their rulers, but viewed from the standpoint of calm, thoughtful good sense, one is disposed to regret that national elections occur oftener than once in ten years.

* * *

It must have been along about the time of an election that the divine William, the immortal Shakespeare, observed, as recorded in the "Midsummer Night's Dream," "What 'durned' fools these mortals be."

* * *

The recent football game between Harvard and Yale, in which the latter won so gloriously, brings to mind the thought that these games of strength are an awful waste of energy. The misdirected force annually expended upon athletics would move mountains and make the desert bloom as the rose, but possibly the good cheer and healthfulness engendered more than make up the loss. It must not be forgotten, though, that extreme athleticism tends to shorten life—to premature age. Big-muscled men become big-hearted, and big hearts are not healthy.

* * *

There are many dangerous features of football that are almost as brutal as the Spanish bull fight, and far surpass prize fighting both in deadliness and brutality. One of the most injudicious things ever said by Vice-President-Elect Roosevelt (if correctly reported by the daily press, and of that we cannot be sure, indeed, it is probably better to give him the benefit of the doubt) was when, in discussing football and its dangers, he observed that he would rather have his boy die from the risks of manly games than grow up a weaklng.

But neither course is necessary to be pursued. One need not grow up a weakling as long as we have so many forms of physical exercise that are absolutely safe, such as golf, horseback riding and hundreds of others.

* * *

Other things being equal the doctor who is ever on the alert to take in all facts, symptoms, etc., in the making of his diagnosis, should be the best detective. Detecting disease like detecting crime demands careful study of all evidence, all clues, all incidents and facts near and remote. Every physician should be a high-classed "Sherlock Holmes." A story has been going the rounds of a doctor who presented himself at the Golden Gates for admission, and after passing a fair examination as to his conduct, Saint Peter agreed to permanently admit him if he could pick out Adam and Eve from the assembled angels. The doctor looked around and soon found his progenitors. But Peter was puzzled, and asked the doctor how in the name of the golden harps had he managed to recognize the first couple. "Oh!" said the doctor, "that is quite easy; they are the only ones without an umbilicus."

* * *

As flies carry infectious germs that breed contagion, so, too, the mosquito probably carries from one victim to another the plasmodium of Laveran that spreads malaria, these being, however, only one of many ways by which these micro-organisms are scattered among their victims.

Appropos to the subject of flies as carriers of contagion, Victor C. Vaughan, in his oration on "State Medicine," before the fifty-first annual meeting of the American Medical Association at Atlantic City, N. J., June 5 to 8, 1900, stated as follows:

"My reason for believing that flies were active in the dissemination of typhoid fever during the late war may be stated as follows: (1) They swarmed over infected fecal matter in the pits, and then visited and fed on the food prepared for the soldiers at the mess tents. In some instances where lime had recently been sprinkled over the contents of the pits, flies with their feet whitened with lime were seen walking over the food. (2) Officers whose mess tents were protected by means of screens suffered proportionately less from typhoid fever than did those whose tents were not so protected. (3) Typhoid fever gradually disappeared in the fall of 1898, with the approach of cold weather and the consequent disabling of the fly. It is possible for the fly to carry the typhoid bacillus in two ways. In the first place, fecal matter containing typhoid germs may adhere to the fly and be mechanically transported. In the second place, it is possible that the typhoid bacillus may be carried in the digestive organs of the fly, and may be deposited with its excrement."

BOOK REVIEWS.

MODERN MEDICINE. By Julius L. Salinger, M.D., Demonstrator of Clinical Medicine, Jefferson Medical College, etc., etc., and Frederick J. Kathyer, M.D., Assistant Demonstrator of Clinical Medicine, Jefferson Medical College, etc., etc. Pp. 800. Illustrated. W. B. Saunders & Co., Philadelphia; cloth, $4.00 net.

This volume of nearly 800 pages appears to us to place itself in an unfortunate category. It is not brief, nor, on the other hand, is it sufficiently full to make it of value as a book of reference. Its aim, the preface states, is to combine in one volume the essentials of Physical Diagnosis; Bacteriology; The Examination of the Sputum, Feces, Urine, Gastric Contents, etc., as applied to Clinical Medicine.

One hundred and seventy pages are devoted to chapters on these subjects and the rest of the book is a discussion of medical diseases classified as usual. Now it is evident that the book is not one calculated to tempt a reader, but that it is intended for the Medical Student.

But the Medical Student already has books individually dealing with Physical Diagnosis, Bacteriology, etc.—books that cover their subjects much more fully and clearly than it has been possible for our authors to do in their limited space. The Student will prefer what he already has, we imagine.

And that part of the book devoted to the Practice of Medicine is unsatisfactory for much the same reason. The book is, on the one hand, not brief enough; one cannot go through it at one sitting, and, using it as a syllabus, get a bird's-eye view of its subject. And it is, on the other hand, too brief. Its descriptions of Disease are incomplete and unsatisfying. Most of all, it sacrifices to brevity those softer spots into which a grappling memory will get its claws, those sometimes speculative but always inviting reasons why. We think that the Student who substitutes the primary portion of the book for works whose subject it curiously discusses will find the foundation of his knowledge of medicine insecure, and that, using the body of the volume to the exclusion of larger treatises, he will raise a superstructure at once bare and incomplete.

There are a number of beautiful plates. The paper, print and binding are good.

THE AMERICAN ILLUSTRATED MEDICAL DICTIONARY. A new and complete dictionary of the terms used in Medicine, Surgery, Dentistry, Pharmacy, Chemistry and the kindred branches, with their pronunciation, derivation and definition, including much collateral information of an encyclopædic character. By W. A. Newman Douland, A.M., M.D., with numerous illustrations and 24 colored plates. W.

B. Saunders & Co., Philadelphia and London. Bound in flexible morocco, $4.50 net.

A book which is intended to fill the gap between the "large, unwieldy lexicon" and the small vocabularies for students' use. A book for the physician's desk.

It contains, in addition to the derivation, pronunciation and definition of the words contained, more than the usual number of tables and of classified information, is copiously illustrated, well printed and handsomely bound.

While it is not an exhaustive or complete encyclopædia of the medical sciences, it appears to contain the information that a man seeks in a dictionary. It may very well take the place of a considerable number of the larger volumes at present in circulation with a saving in time and storage room to the owners.

A Manual of Hygiene and Sanitation. By Seneca Egbert, A.M., M.D., Professor of Hygiene and Dean of the Medico-Chirurgical College of Philadelphia, etc., etc. Second edition, enlarged and thoroughly revised. Illustrated with 77 engravings. Lea Brothers & Co., Philadelphia and New York; cloth, $2.25 net.

The study of hygiene in a systematic way has been a development of the last few years. Much of what we now know to be essential to the preservation of public health and many facts bearing upon the avoidance of personal dangers have been given to us by the bacteriologists. That some forms of disease are preventable and that measures taken to diminish the ravages of others meet with some degree of success has long been believed. But with the knowledge of the causes of some of the Zymotic fevers and with agents apparently able to destroy those, a reasonableness invaded the field of Preventive Medicine that it had hitherto somewhat lacked.

The subject of sanitation is now attracting more and more attention from the profession and the public and the no less important consideration of personal hygiene also comes in for its share of discussion. What shall we eat, what shall we drink and wherewithal shall we be clothed? Doctor, must we boil the ice?

It is to be hoped that the public will allow us a few years before it expects the physician to take a contract to prevent disease in the individual.

To be sober, no one knows better than the sanitarian that when he says it is the object of his study to prevent disease, he is hitching his wagon to a star. The sick, like the poor, we have always with us, and it is in the mere diminution of their number that he reckons his success. The science of hygiene and sanitation, as it is at present, may be said fairly to consist of a little bacteriology, some applied mechanics and common sense. Nevertheless, it is a subject that carries its justification in the lowered death rate of cities where even a few of its principles have been applied, a subject that may be expected to receive increasing research, discussion and application for years to come. It will be the part of the profession to forward as it has been to promote this movement.

The number of medical schools with a Chair of Hygiene and a course of instruction in it will be larger than it is at present, for the practitioner will be expected to qualify as an advisor in these matters to the converts of his community and to the families of his patients.

Dr. Egbert's manual is written for his classes and the exhaustion of the first edition would seem to show that it has received a larger audience. The book contains 435 pages and the subject is treated under the following headings: An Introduction in Bacteriology, The Atmosphere, Ventilating and Heating, Water, Food, Stimulants and Beverages, Personal Hygiene, School Hygiene, Disinfection and Quarantine, the removal and disposal of Sewage, Military Hygiene, Vital Statistics, the examination of Air, Water and Food, and an index.

The book is primarily intended for the student, but it is well adapted to the needs of the practitioner and is not unsuitable for intelligent lay readers. It is written with especial consideration of American conditions, covers its ground concisely and systematically, and is very clear and pleasant reading.

The chapter on Military Hygiene, in which a large subject in itself is opened up, is new in this edition. Some of the lessons of the late war are touched upon and a more thorough study of this subject is urged upon army men.

It is a most interesting book. We hope the second edition may continue the success of the first.

We have also received.

International Clinics. A quarterly of clinical lectures and especially prepared articles on Medicine, Neurology, Surgery, Therapeutics, Obstetrics, Pædiatrics, Pathology, Dermatology, Diseases of the Eye, Ear, Nose and Throat and other topics of interest to Students and Practitioners. By leading members of the medical profession throughout the world. Edited by Henry W. Cattell, A.M., M.D., Philadelphia, with the collaboration of John B. Murphy, M.D., of Chicago; Alexander D. Blockader, M.D., of Montreal; H. C. Wood, M.D., of Philadelphia; T. M. Rotch, M.D., of Boston; E. Landall, M.D., of Paris; Thomas G. Morton, M.D., and Charles H. Reed, M.D., of Philadelphia, with regular correspondents in Montreal, London, Paris and Vienna. Vol. III. Tenth Series. 1900. J. B. Lippincott Co., Philadelphia.

Bacteriology and Surgical Technique for Nurses. By Emily M A. Stoney Superintendent of the Training School for Nurses, St. Anthony's Hospital, Rock Island, Ill. Illustrated. W. B. Saunders & Co., Philadelphia; cloth, $1.25 net.

The Physicians' Visiting List (Lindsay & Blakiston's) for 1901. The fiftieth year of its publication. P. Blakiston's Son & Co., Philadelphia; morocco, in pocketbook form, $1.00.

TABLE OF CONTENTS.

Brief Clinical Notes on Series of Surgical Cases Treated During Past Year, by Thomas H. Manley, M.D. 1

Sudden Death, by Louis Schwab, M.D. 8

When to Operate in Appendicitis, and Why, by John P. Murphy, M.D. 15

The Clinical Significance of Albuminuria and Tube Casts, by A. L. Gray, M.D. 20

The Effect of Summer Heat Upon the Public Health, by Henry Dwight Chapin, M.D. 25

A Few Practical Points in the Management of Labor, by William J. G. Dawson, M.D. 30

Latent Gonorrhea in the Male as a Factor in Diseases of the Female Organs of Generation, by Lewis Wheat, M.D. 34

On the Therapeutic Action of Cystogen, by Clarence M. Lewis, M.D. 37

Why I Use Pepto-Mangan "Gude"—An Experimental Demonstration, by Wm. Krauss, Ph.G., M.D. 40

Continued on page 9.

Etna-Chemical-Co.-313 West St, New York, U.S.A.
London, Paris, Bombay, Melbourne, Mexico, Valparaiso,
Samples Free To Physicians; Sold By all Druggists

Orphol (Betanaphtol=Bismuth= Von Heyden)

A MOST RELIABLE AND EFFICIENT ANTISEPTIC AND ASTRINGENT FOR THE GASTRO-INTESTINAL TRACT.

Orphol is a neutral, non-caustic and non-poisonous chemical compound composed of 80% of bismuth oxide and 20% of betanaphtol. It is a fawn-colored powder of faintly aromatic taste and odor, and insoluble in water. Experiments made in **Professor Nencki's** laboratory at the Imperial Institute for Experimental Medicine at St. Petersburg show that its decomposition begins in the stomach and is completed in the small intestine.

Orphol soothes the irritated and inflamed intestinal mucosa, acting, from its slow decomposition, as a continuous and harmless disinfectant. It directly destroys the disease germs and neutralizes their poisons; and after absorption fixes the toxic albumins and favors their elimination. It is free from the dangers of carbolic acid, naphtol, sublimate, etc., and its use obviates the necessity of employing complicated and uncertain diarrhœa and cholera mixtures.

A practical intestinal antisepsis can be effected and maintained with Orphol, and it is indicated in all catarrhal and fermentative gastro-intestinal processes, ptomaine poisoning, gastritis, summer diarrhœa, dysentery, typhoid fever, etc. It agrees with the most delicate stomach, and children take it without difficulty.

Orphol has been extensively and most successfully employed during the past six years. Reprints and abstracts of papers by **Drs. R. W. Wilcox** and **Louis Fischer** of New York; **D. D. Stewart** and **Hugo Engel** of Philadelphia; **E. Chaumier** of Tours, and others, will be mailed upon request.

DOSAGE.

For Adults: 25 to 75 grains, or 5 to 15 tablets, daily in divided doses.
For Children: 3 to 5 grains, or ½ to 1 tablet, every three or four hours on an empty stomach.
Orphol in powder form is supplied in 1-oz. vials only.
Orphol in 5-grain tablets is supplied only in flat, oval vials, containing 50 tablets.

CAUTION TO PHYSICIANS.

Complaints having reached us from physicians that certain mixtures and tablets purporting to contain bismuth betanaphtolate have had a caustic and burning taste, we have found upon analysis that they contain the ordinary irritant naphtol, and not the neutral, tasteless and insoluble chemical compound of Von Heyden. To preclude all possibility of error we would request the profession to prescribe **Von Heyden's Betanaphtol=Bismuth** under the more distinctive name of "**Orphol**".

SCHERING & GLATZ, 58 Maiden Lane, New York,
Literature furnished on application. Sole Agents for the United States.

CREOSOTAL

CREOSOTE CARBONATE—
Von Heyden.

DUOTAL

GUAIACOL CARBONATE—
Von Heyden.

ANTISEPTIC CREDÉ

CITRATE OF SILVER—
Von Heyden.
CHEMICALLY PURE
POWDER AND TABLETS.

CREDÉ'S LACTATE OF SILVER

CHEMICALLY PURE
POWDER AND TABLETS.

COLLARGOLUM

SOLUBLE METALLIC SILVER
—Credé.

UNGUENTUM CREDÉ

OINTMENT OF SOLUBLE
METALLIC SILVER.

XEROFORM

TRIBROMPHENOL BISMUTH
—Von Heyden.

HYRGOLUM

SOLUBLE METALLIC
MERCURY.

CONTENTS (Continued from Page 7).

Importance of Accurate Primary and Consecutive Examinations After Fracture, by Thomas H. Manley, M.D.... 42

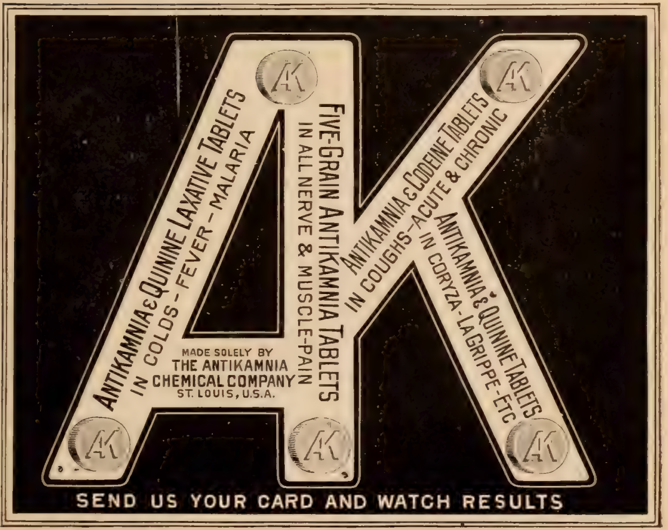
Do Animals Feel Pain Less than Men? 43

"Re Bottini's Operation"............ 43

Progressive Pernicious Anæmia and Malignant Disease of the Stomach, by Albert Abrams, M.D............... 51

Examination and Treatment of Ulceration of the Abdominal Rectum and Sigmoid Flexure, with Comparison of Old and Modern Methods, by Sterling B. Taylor, M.S................. 54

Pithy, Pungent and Pointed Paragraphs. 61


AK
ANTIKAMNIA & QUININE LAXATIVE TABLETS
IN COLDS - FEVER - MALARIA
FIVE-GRAIN ANTIKAMNIA TABLETS
IN ALL NERVE & MUSCLE-PAIN
ANTIKAMNIA & CODEINE TABLETS
IN COUGHS-ACUTE & CHRONIC
ANTIKAMNIA & QUININE TABLETS
IN CORYZA-LAGRIPPE-ETC
MADE SOLELY BY
THE ANTIKAMNIA
CHEMICAL COMPANY
ST. LOUIS, U.S.A.
SEND US YOUR CARD AND WATCH RESULTS

THE NEW ILLUSTRATED EDITION,

LIPPINCOTT'S MEDICAL DICTIONARY.

A Complete Vocabulary of the Terms used in Medicine and the Allied Sciences, with their Pronunciation, Etymology, and Signification, including much Collateral Information of a Descriptive and Encyclopædic Character. Prepared on the basis of "Thomas's Complete Medical Dictionary." By RYLAND W. GREENE, B.A., with the Editorial Collaboration of JOHN ASHHURST, JR., M.D., LL.D., GEORGE A. PIERSOL, M.D., JOSEPH P. REMINGTON, Ph.M., F.C.S.

Complete in 1 imperial octavo volume of 1100 pages. Cloth, $7.00; sheep, $8.00; half Russia, $8.50.

As the essence of a dictionary lies in its definitions, the utmost care has been expended in rendering this part of the work particularly excellent. The constant endeavor has been to make the explanation of each word distinct and full without verbosity.

The system of indicating or expressing pronunciation adopted in this work is new and original. It is based on the scientific principle of phonetics as recognized by the best linguists of this and other countries.

J. B. LIPPINCOTT COMPANY, Publishers, PHILADELPHIA.

DR. I. N. LOVE.

Professional Work Limited to Internal Medicine,

Pediatrics and General Diagnosis.

Superior Hospital Accommodations Furnished when Desired.

4661 Maryland Ave. ST. LOUIS, MO.

WHEELER'S TISSUE PHOSPHATES.

Wheeler's Compound Elixir of Phosphates and Calisaya. A Nerve Food and Nutritive Tonic, for the treatment of Consumption, Bronchitis, Scrofula, and all forms of Nervous Debility.

This elegant preparation combines in an Agreeable Aromatic Cordial, acceptable to the most Irritable Conditions of the Stomach, Bone-Calcium Phosphate $Ca_3\ 2\ PO_4$, Sodium Phosphate $Na_2\ HPO_4$, Ferrous Phosphate $Fe_3\ 2\ PO_4$, Trihydrogen Phosphate $H_3\ PO_4$, and the Active Principles of Calisaya and Wild Cherry.

The special indication of this combination of Phosphates in Spinal Affections, Caries, Necrosis, Ununited Fractures, Marasmus, Poorly Developed Children, Retarded Dentition, Alcohol, Opium, Tobacco Habits, Gestation and Lactation, to Promote Development, etc., and as a physiological restorative in Sexual Debility and all used-up conditions of the Nervous System, should receive the careful attention of good therapeutists.

Notable Properties.—As reliable in Dyspepsia as Quinine in Ague. Secures the largest percentage of benefit in Consumption and other Wasting Diseases by determining perfect digestion and assimilation of food. When using it Cod Liver Oil may be taken without repugnance. It renders success possible in treating Chronic Diseases of Women and Children, who take it with pleasure for prolonged periods, a factor essential to maintain the good will of the patient. Being a Tissue Constructive, it is the best general utility preparation for Tonic Restorative purposes we have, no mischievous effects resulting when exhibited in any possible morbid condition of the system.

Phosphates being a **Natural Food Product,** no substitute will do their work.

DOSE.—For an adult, one tablespoonful three times a day, after eating; from seven to twelve years of age, one dessertspoonful; from two to seven, one teaspoonful. For infants, from five to twenty drops according to age. Prepared at the Chemical Laboratory of

T. B. WHEELER, M. D., Montreal, P. Q.

☞ To prevent substitution put up in pound bottles only and sold by all Druggists at One Dollar. Read the pamphlet on this subject sent you.

TABLE OF CONTENTS.

A Definite Account of My Position Upon Some Appendicitis Questions, by Robert Morris, M.D. 65

Appendicitis from a Medical Standpoint, by I. N. Love, M.D. 82

Abortion, by E. T. Dickinson, B.S., M.D. 91

The Sources of Modern Materia Medica 94

The Treatment of Heart Disease in Childhood 97

Richmond Academy of Medicine and Surgery 100

Peculiar Transformation in the Color of Hair Due to the Internal Administration of Colchicin, by Dr. Alex. L. Hogddon 102

The Law of Dying Declarations, by M. J. Sughrue...................... ... 103

Management of Insanity.............. 107

Typhoid Fever.... 107

Treatment of Prostatic Hypertrophy... 108

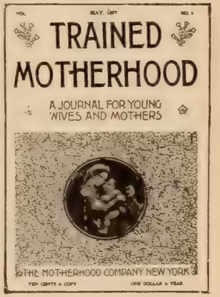
Heart Tonics......................... 108

Preventive Treatment of Migraine.... 109

Continued on page 9.

IS TRAINED MOTHERHOOD A STRANGER TO YOU, DOCTOR?

If so, we hope it will not long remain so. It is a monthly journal of 44 reading pages, size 5½ x 8½, and is devoted to the young wife and mother in the interests of her children, both physically and morally, for in many instances the one has a direct bearing on the other. Many of its articles are contributed by physicians of pre-eminent standing in the profession, and yet are not too scientific to be understood by the layman. Our story is a long one, and can be told better by the magazine itself. May we not send you a sample copy? Send us your name and address, and also the name and address of any of your maternity cases to whom you would like sample copy sent, and we will be glad to do so.



THE MOTHERHOOD CO.,

21 PARK ROW,

Subscription Price, One Dollar per Year. New York City.

Argentamine

Has the most vigorous penetrative properties and the greatest antibacterial power of all the newer silver preparations.

Beta=Eucain

A safe and non-irritating local anæsthetic, four times less toxic than cocain, and sterilizable by boiling without decomposition.

UROTROPIN

Urotropin is the best and most efficient of all urinary antiseptics, sterilizing the urine, increasing diuresis, and dissolving calculi and deposits. By its use alkaline and putrid urines, containing micro-organisms, blood, mucus, pus, uric acid, and urates, are rendered normal in appearance and reaction. It limits suppuration and exercises a healing effect upon the inflamed mucosa of the urinary passages. It is the most reliable sterilizer of the urines of typhoid fever patients, acting also as a prophylactic. It is extremely valuable in calculous disease, acute and chronic urethritis and gonorrhœa, bacteriuria, prostatitis, acute and chronic gonorrhœal cystitis, vesical inflammation of the ammoniacal or acid varieties, pyelitis, pyelo-nephritis, phosphaturia, nocturnal enuresis, and for the irritable bladder of diabetes. It is a powerful antidote to the urinary poisoning that so frequently occurs in suppurative diseases of the genito-urinary organs. In renal colic the attacks are cut short, the after-pains are lessened or abolished, and recurrence is postponed. It has been used to great advantage in all the affections marked by deficient elimination of uric acid and the urates, such as gout and rheumatism; and it is indicated preparatory to and after all instrumentation or operative procedure upon the genito-urinary tract, to sterilize the urine and prevent infection.

Extremely favorable reports of its efficiency have been published by **Professors Nicolaier, Heubner, Casper, Belfield, Wilcox, McGee, Horwitz** and **Elliott, Drs. Brewer, Cohn, Flexner, Richardson, Ehrmann, Howland, Thompson, Dalton, Boeckmann, Cammidge,** and many others.

DOSE.—For adults, 7½ grains two or three times daily, best administered in half a pint of plain or carbonated water. Much larger amounts can be given when indicated, however, up to 60 grains or more daily.

Urotropin, prepared by **Chemische Fabrik auf Actien, formerly E. Schering,** of Berlin, Germany, is supplied in half ounce and one ounce vials and in the form of half gram tablets (7½ grains each), in paper boxes of twenty tablets.

Literature furnished on application.

SCHERING & GLATZ, 58 Maiden Lane, New York,
Sole Agents for the United States.

Glutol=Schleich

An odorless, non-irritant and non-poisonous antiseptic powder for the treatment of wounds; the best dry dressing for burns.

Schering's Glycero=Phosphates

guaranteed to be true glycero-phosphates, and not simple phosphates. Tonics and Stimulants to the nervous structures.

CONTENTS (Continued from Page 7).

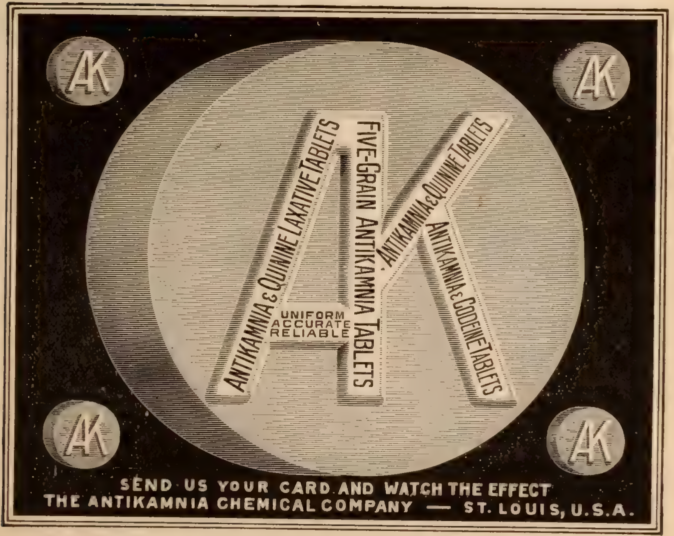
Recovery of a Case of Cancer Pronounced Incurable.................. 110

Cysts of the External Auditory Canal. 110

EDITORIAL.......................... 111

Importance of a More Intimate Knowledge of Appendicitis Upon the Part of the Profession—Doctors' Contributions to Current Literature, Medical and General—The American Academy of Medicine on Specialism and Advertising—Department of Ethnology and Archæology in the Pan-American Exposition at Buffalo in 1901—Mississippi Valley Medical Association, Asheville Meeting, Oct. 9 to 11, 1900—Death of Dr. Truman W. Miller, of Chicago—Heroic Treatment for Soft Corns Between the Toes—Dr. Charles A. L. Reed, President of the American Medical Association.

EDITORIAL COMMENT.................. 118


AK
AK
ANTIKAMNIA & QUININE LAXATIVE TABLETS
FIVE-GRAIN ANTIKAMNIA TABLETS
ANTIKAMNIA & QUININE TABLETS
ANTIKAMNIA & CODEINE TABLETS
UNIFORM
ACCURATE
RELIABLE
AK
AK
SEND US YOUR CARD AND WATCH THE EFFECT
THE ANTIKAMNIA CHEMICAL COMPANY — ST. LOUIS, U.S.A.

WHEELER'S TISSUE PHOSPHATES.

Wheeler's Compound Elixir of Phosphates and Calisaya. A Nerve Food and Nutritive Tonic, for the treatment of Consumption, Bronchitis, Scrofula, and all forms of Nervous Debility.

This elegant preparation combines in an Agreeable Aromatic Cordial, acceptable to the most Irritable Conditions of the Stomach, Bone-Calcium Phosphate $Ca_3\ 2\ PO_4$, Sodium Phosphate $Na_2\ HPO_4$, Ferrous Phosphate $Fe_3\ 2\ PO_4$, Trihydrogen Phosphate $H_3\ PO_4$, and the Active Principles of Calisaya and Wild Cherry.

The special indication of this combination of Phosphates in Spinal Affections, Caries, Necrosis, Ununited Fractures, Marasmus, Poorly Developed Children, Retarded Dentition, Alcohol, Opium, Tobacco Habits, Gestation and Lactation, to Promote Development, etc., and as a physiological restorative in Sexual Debility and all used-up conditions of the Nervous System, should receive the careful attention of good therapeutists.

Notable Properties.—As reliable in Dyspepsia as Quinine in Ague. Secures the largest percentage of benefit in Consumption and other Wasting Diseases by determining perfect digestion and assimilation of food. When using it Cod Liver Oil may be taken without repugnance. It renders success possible in treating Chronic Diseases of Women and Children, who take it with pleasure for prolonged periods, a factor essential to maintain the good will of the patient. Being a Tissue Constructive, it is the best general utility preparation for Tonic Restorative purposes we have, no mischievous effects resulting when exhibited in any possible morbid condition of the system.

Phosphates being a **Natural Food Product,** no substitute will do their work.

DOSE.—For an adult, one tablespoonful three times a day, after eating; from seven to twelve years of age, one dessertspoonful; from two to seven, one teaspoonful. For infants, from five to twenty drops according to age. Prepared at the Chemical Laboratory of

T. B. WHEELER, M. D., Montreal, P. Q.

☞ To prevent substitution put up in pound bottles only and sold by all Druggists at One Dollar. Read the pamphlet on this subject sent you.

THE NEW ILLUSTRATED EDITION,

LIPPINCOTT'S MEDICAL DICTIONARY.

A Complete Vocabulary of the Terms used in Medicine and the Allied Sciences, with their Pronunciation, Etymology, and Signification, including much Collateral Information of a Descriptive and Encyclopædic Character. Prepared on the basis of "Thomas's Complete Medical Dictionary." By RYLAND W. GREENE, B.A., with the Editorial Collaboration of JOHN ASHHURST, JR., M.D., LL.D., GEORGE A. PIERSOL, M.D., JOSEPH P. REMINGTON, Ph.M., F.C.S.

Complete in 1 imperial octavo volume of 1100 pages. Cloth, $7.00; sheep, $8.00; half Russia, $8.50.

As the essence of a dictionary lies in its definitions, the utmost care has been expended in rendering this part of the work particularly excellent. The constant endeavor has been to make the explanation of each word distinct and full without verbosity.

The system of indicating or expressing pronunciation adopted in this work is new and original. It is based on the scientific principle of phonetics as recognized by the best linguists of this and other countries.

J. B. LIPPINCOTT COMPANY, Publishers, PHILADELPHIA.

DR. I. N. LOVE.

Professional Work Limited to Internal Medicine,

Pediatrics and General Diagnosis.

Superior Hospital Accommodations Furnished when Desired.

4661 Maryland Ave. ST. LOUIS, MO.

TABLE OF CONTENTS.

Conclusions Reached After a Study of Typhoid Fever Among the American Soldiers in 1898. By Victor C. Vaughan, M.D. 119

The Present Status of the Widal Reaction as a Diagnostic Test in Typhoid Fever. By Arthur R. Guerard, M.D. 138

The Dietetic Treatment of Typhoid Fever Cases. By William Murrell, M.D., F.R.C.P. 141

Acute Hemorrhagic Transverse Myelitis as a Complication of Typhoid Fever 145

A Case of Membranous Laryngitis Complicating Typhoid Fever 146

Results Which Have Been Obtained by the Antityphoid Inoculation 147

Typhoid Affections of the Larynx 147

The Typhoid Bacillus and Typhoid Fever 147

Typhoid Fever at a Golf Club 148

Continued Use of Antiseptic and Eliminative Treatment of Typhoid Fever, Without Deaths 148

Appendicitis and Typhoid Fever 148

Typhoid Infection 148

The Hepatic Form of Typhoid Fever .. 149

Importance of the Disinfection of the Urine of Typhoid Patients 149

Inoculation for Typhoid Fever 150

The Cardiac Complications During Convalescence from Typhoid 151

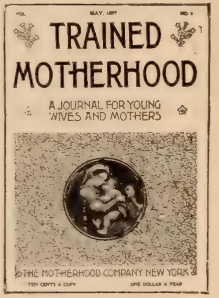
Inoculation With Typhoid Vaccine as a Preventive 151

Delayed Suppuration Due to Typhoid Bacillus 151

Continued on page 9.

IS TRAINED MOTHERHOOD A STRANGER TO YOU, DOCTOR?

If so, we hope it will not long remain so. It is a monthly journal of 44 reading pages, size 5½ x 8½, and is devoted to the young wife and mother in the interests of her children, both physically and morally, for in many instances the one has a direct bearing on the other. Many of its articles are contributed by physicians of pre-eminent standing in the profession, and yet are not too scientific to be understood by the layman. Our story is a long one, and can be told better by the magazine itself. May we not send you a sample copy? Send us your name and address, and also the name and address of any of your maternity cases to whom you would like sample copy sent, and we will be glad to do so.


TRAINED MOTHERHOOD
A JOURNAL FOR YOUNG WIVES AND MOTHERS
THE MOTHERHOOD COMPANY NEW YORK
TEN CENTS A COPY
ONE DOLLAR A YEAR

THE MOTHERHOOD CO.,
21 PARK ROW,
Subscription Price, One Dollar per Year. **New York City.**

Argentamine

Has the most vigorous penetrative properties and the greatest antibacterial power of all the newer silver preparations.

Beta=Eucain

A safe and non-irritating local anæsthetic, four times less toxic than cocain, and sterilizable by boiling without decomposition.

UROTROPIN

Urotropin is the best and most efficient of all urinary antiseptics, sterilizing the urine, increasing diuresis, and dissolving calculi and deposits. By its use alkaline and putrid urines, containing micro-organisms, blood, mucus, pus, uric acid, and urates, are rendered normal in appearance and reaction. It limits suppuration and exercises a healing effect upon the inflamed mucosa of the urinary passages. It is the most reliable sterilizer of the urines of typhoid fever patients, acting also as a prophylactic. It is extremely valuable in calculous disease, acute and chronic urethritis and gonorrhœa, bacteriuria, prostatitis, acute and chronic gonorrhœal cystitis, vesical inflammation of the ammoniacal or acid varieties, pyelitis, pyelo-nephritis, phosphaturia, nocturnal enuresis, and for the irritable bladder of diabetes. It is a powerful antidote to the urinary poisoning that so frequently occurs in suppurative diseases of the genito-urinary organs. In renal colic the attacks are cut short, the after-pains are lessened or abolished, and recurrence is postponed. It has been used to great advantage in all the affections marked by deficient elimination of uric acid and the urates, such as gout and rheumatism; and it is indicated preparatory to and after all instrumentation or operative procedure upon the genito-urinary tract, to sterilize the urine and prevent infection.

Extremely favorable reports of its efficiency have been published by **Professors Nicolaier, Heubner, Casper, Belfield, Wilcox, McGee, Horwitz** and **Elliott, Drs. Brewer, Cohn, Flexner, Richardson, Ehrmann, Howland, Thompson, Dalton, Boeckmann, Cammidge,** and many others.

DOSE.—For adults, 7½ grains two or three times daily, best administered in half a pint of plain or carbonated water. Much larger amounts can be given when indicated, however, up to 60 grains or more daily.

Urotropin, prepared by **Chemische Fabrik auf Actien, formerly E. Schering,** of Berlin, Germany, is supplied in half ounce and one ounce vials and in the form of half gram tablets (7½ grains each), in paper boxes of twenty tablets.

Literature furnished on application.

SCHERING & GLATZ, 58 Maiden Lane, New York,
Sole Agents for the United States.

Glutol=Schleich

An odorless, non-irritant and non-poisonous antiseptic powder for the treatment of wounds; the best dry dressing for burns.

Schering's Glycero=Phosphates

guaranteed to be true glycero-phosphates, and not simple phosphates. Tonics and Stimulants to the nervous structures.

CONTENTS (Continued from Page 7).

Typhoid Fever Among the British Troops in South Africa 152

Treatment of Typhoid Perforation of the Bowel 153

Intestinal Antisepsis by Chlorin Water 153

The Significance of Heredity. By John L. Dickey, A.M., M.D. 154

Therapeutics 158

Asthma and Its Treatment. By A. E. May, M.D. 159

Professor Manges on Heroin 161

Book Reviews 162

The Treatment of Fractures. By Charles Locke Scudder, M.D.—A Practical Treatise on Sexual Disorders of the Male and Female. By Robert W. Taylor, A.M., M.D.—Progressive Medicine—A Text Book of the Treatment of Diseases and Symptoms — Thompson's Practical Medicine. By William Gilman Thompson—Clinical Examination of the Urine and Urinary Diagnosis. By J. Bergen Ogden, M.D.—Atlas and Epitome of Diseases Caused by Accidents. By Dr. Ed. Golebiewski—Atlas and Epitome of Gynecology. By Dr. Oskar Schaeffer—International Clinics, Vol. II.

Intestinal Rest in Typhoid 166

Editorial 167

Typhoid Fever—No Food—Diet—Mouth Toilet—Reduction of Temperature—Intestinal Hemorrhage—Intestinal Perforation—Convalescence—Asheville Meeting of the Mississippi Valley Medical Association—The Close of the Vacations.

A Chestnut has a Burr

Opium a Habit

PAIN has relief in

FIVE GRAIN Antikamnia Tablets

WHICH DO NOT DEPRESS THE HEART

DO NOT PRODUCE HABIT

ARE ACCURATE—SAFE—SURE

MADE SOLELY BY

The Antikamnia Chemical Company

ST. LOUIS, MO. U.S.A.

WHEELER'S TISSUE PHOSPHATES.

Wheeler's Compound Elixir of Phosphates and Calisaya. A Nerve Food and Nutritive Tonic, for the treatment of Consumption, Bronchitis, Scrofula, and all forms of Nervous Debility.

This elegant preparation combines in an Agreeable Aromatic Cordial, acceptable to the most Irritable Conditions of the Stomach, Bone-Calcium Phosphate $Ca_3\,2\,PO_4$, Sodium Phosphate Na_2HPO_4, Ferrous Phosphate $Fe_3\,2\,PO_4$, Trihydrogen Phosphate H_3PO_4, and the Active Principles of Calisaya and Wild Cherry.

The special indication of this combination of Phosphates in Spinal Affections, Caries, Necrosis, Ununited Fractures, Marasmus, Poorly Developed Children, Retarded Dentition, Alcohol, Opium, Tobacco Habits, Gestation and Lactation, to Promote Development, etc., and as a physiological restorative in Sexual Debility and all used-up conditions of the Nervous System, should receive the careful attention of good therapeutists.

Notable Properties.—As reliable in Dyspepsia as Quinine in Ague. Secures the largest percentage of benefit in Consumption and other Wasting Diseases by determining perfect digestion and assimilation of food. When using it Cod Liver Oil may be taken without repugnance. It renders success possible in treating Chronic Diseases of Women and Children, who take it with pleasure for prolonged periods, a factor essential to maintain the good will of the patient. Being a Tissue Constructive, it is the best general utility preparation for Tonic Restorative purposes we have, no mischievous effects resulting when exhibited in any possible morbid condition of the system.

Phosphates being a **Natural Food Product,** no substitute will do their work.

DOSE.—For an adult, one tablespoonful three times a day, after eating; from seven to twelve years of age, one dessertspoonful; from two to seven, one teaspoonful. For infants, from five to twenty drops according to age. Prepared at the Chemical Laboratory of

T. B. WHEELER, M. D., Montreal, P. Q.

☞ To prevent substitution put up in pound bottles only and sold by all Druggists at One Dollar. Read the pamphlet on this subject sent you.

THE NEW ILLUSTRATED EDITION,

LIPPINCOTT'S MEDICAL DICTIONARY.

A Complete Vocabulary of the Terms used in Medicine and the Allied Sciences, with their Pronunciation, Etymology, and Signification, including much Collateral Information of a Descriptive and Encyclopædic Character. Prepared on the basis of "Thomas's Complete Medical Dictionary." By RYLAND W. GREENE, B.A., with the Editorial Collaboration of JOHN ASHHURST, JR., M.D., LL.D., GEORGE A. PIERSOL, M.D., JOSEPH P. REMINGTON, Ph.M., F.C.S.

Complete in 1 imperial octavo volume of 1100 pages. Cloth, $7.00; sheep, $8.00; half Russia, $8.50.

As the essence of a dictionary lies in its definitions, the utmost care has been expended in rendering this part of the work particularly excellent. The constant endeavor has been to make the explanation of each word distinct and full without verbosity.

The system of indicating or expressing pronunciation adopted in this work is new and original. It is based on the scientific principle of phonetics as recognized by the best linguists of this and other countries.

J. B. LIPPINCOTT COMPANY, Publishers, PHILADELPHIA.

DR. I. N. LOVE.

Professional Work Limited to Internal Medicine,

Pediatrics and General Diagnosis.

Superior Hospital Accommodations Furnished when Desired.

4661 Maryland Ave. ST. LOUIS, MO.

TABLE OF CONTENTS.

Malaria 173

The Life History of the Malarial Parasite 185

Treatment of Malaria in the Roman Campagna 185

The Etiology of Malaria 187

Prevention of Malarial Fever 189

Malaria and the Mosquito 190

Berberin in Malarial Swelling of the Spleen 192

The Therapeutic Value of Urotropin. By Dr. Emil Suppan 193

Case of Ulcerative Colitis. By T. J. Biggs, M.D. 196

Treatment of Migraine 198

Quinine Sulphate in Complete Abortion 198

Address to Students 199

Gonorrhœa in Its Relations to Insurance. D. D. G. Hall, M.D. 207

Phenocoll-Hydrochlorate in Malaria ... 211

Examination of the Blood; Its Value to the General Practitioner 211

Don'ts in Connection with Heart Disease 212

Scholarship of the American Medical Association 212

Interference with "Christian Scientists" 213

A Therapeutic Note on Aspirin. By Dr. Otto Lehmann 213

Continued on page 9.

℞—One teaspoonful of CELERINA four times a day for vocal, mental and physical fatigue. One teaspoonful of CELERINA taken just before singing or speaking strengthens the voice.

RIO CHEMICAL CO., St. Louis, Mo., U. S. A.

Formalin Lamp

Schering's Formalin Disinfectant and Deodorizing Lamp.

A most energetic disinfector and destroyer of foul and decomposing odors.
An absolutely reliable agent for air purification and sterilization.
Far more efficacious and pleasant than sulphur, carbolic acid, cresolene, etc.
The most efficient destroyer of the disease-producing micro-organisms.
Invaluable in the treatment and prevention of tuberculosis, diphtheria, scarlet fever, measles, whooping-cough, catarrh, influenza, etc.
Does not injure furniture, fabrics, or material of any kind.

When the vapors of Formalin are employed in the treatment of zymotic diseases, or for ordinary air purification and sterilization, one pastil should be constantly evaporated in the upper cup of the lamp. When rapid vaporization is required the upper cup should be removed and the pastils placed directly in the lower receptacle.

Schering's Formalin Disinfector.

The ideal appliance for the reliable disinfection of large rooms and entire buildings; from 200 to 250 Formalin pastils of 1 gramme each (100% pure formaldehyde) can be vaporized in one disinfector at a time. Approved and recommended by the highest foreign and American authorities and adopted by many Boards of Health and School authorities.

Formalin Disinfector

Beta-Eucaine (Eucaine Hydrochlorate "B")

Eucaine "B" has been extensively used in all branches of surgery, dentistry, ophthalmology, etc. Favorable reports concerning it have come from a host of practitioners on both sides of the Atlantic.

In a report made at the Academy of Medicine, Paris, March 29, 1898, published in *The Bulletin Médical* of March 30, 1898, **Prof. Reclus** stated: "**Eucaine 'B'** possesses a number of undubitable advantages. In the first place, **its solution can be boiled without undergoing decomposition, thus permitting it to be sterilized by heat.** This cannot be done with cocaine. In the second place solutions of **Eucaine 'B' are stable and this is the case, to such an extent, that he has been able, in conjunction with Dr. Legrand, to perform a number of long and delicate operations with solutions that were more than four months old.** This is far from being possible with cocaine solutions, as they change at the end of four or five days. Finally, and this is really the most important point, **Eucaine 'B' is 3¾ times less toxic than cocaine.**"

Glutol-Schleich

or Formalin gelatin, is an odorless, non-irritant and non-poisonous antiseptic powder, forming a hard scab in a few hours in contact with a clean wound, and of pre-eminent value in its treatment, since it renders other disinfectant measures unnecessary. Formalin is set free from the compound by the action of the tissue cells; a continuous stream penetrates every corner and crevice of the wound, and effects molecular antisepsis. Acute purulent processes are cut short, and lesions can be relied upon to run an aseptic course.

Urotropin.

A most efficient diuretic, urinary antiseptic, uric acid solvent, and remedy for calculous disease. Rapidly renders alkaline and putrid urine containing mucous, pus, uric acid, and amorphous urates normal in appearance and reaction. It sterilizes the urine, increases its quantity, and dissolves calculi and deposits. Very valuable in all suppurative diseases of the genito-urinary tract, pyelitis, cystitis with ammoniacal decomposition of the urine, phosphaturia, and also in gouty and rheumatic affections where active elimination of uric acid and the urates is required. Dose, 3 to 7½ grains two to three times a day, best administered in half a pint of simple or carbonated water.

SCHERING & GLATZ, 58 Maiden Lane, New York,
Sole Agents for the United States.

Literature furnished on application.

CONTENTS (Continued from Page 7).

A New and Efficient Anti-Plasmodial.. 215

Centrifugal Analysis of Urine......... 215

BOOK REVIEWS........................ 216

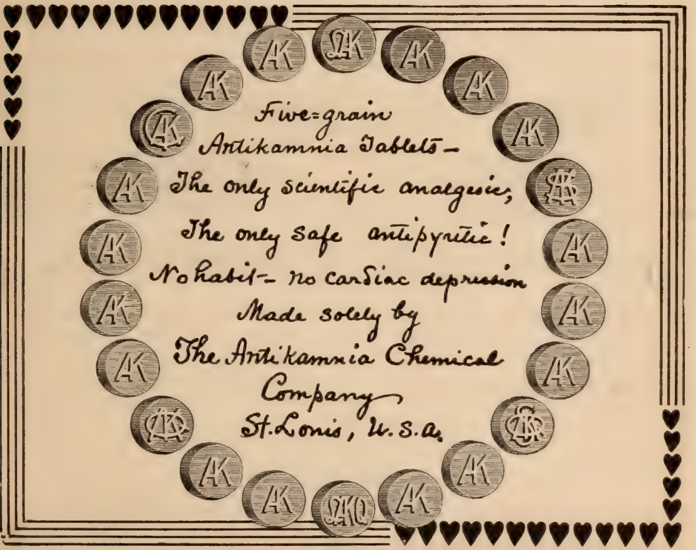
Thompson's Practical Medicine. By William Gilman Thompson, M.D.—Practical Uranalysis and Urinary Diagnosis. By Charles W. Purdy, M. D.—A Manual of Personal Hygiene.—The Treatment of Fractures. By W. L. Estes, A.M., M.D.—The Technique of Surgical Gynecology. By Augustin H. Goelet, M.D.

The Rheumatic Heart, with Especial Reference to Treatment............ 218

EDITORIAL 221

Malaria: Its Varied Expressions and Accompaniments.—The Duty of Physicians in Teaching Their Patients Practical Hygiene.—Malaria and the Mosquito Theory.—Asheville Meeting of the Mississippi Valley Medical Association.—Death of Dr. Hunter McGuire.

EDITORIAL COMMENT.................. 229



Five-grain
Antikamnia Tablets—
The only scientific analgesic,
The only safe antipyretic!
No habit— no cardiac depression
Made solely by
The Antikamnia Chemical
Company
St. Louis, U.S.A.

The Standard Medicine of the World.

HAYDEN'S VIBURNUM COMPOUND.

The Great

ANTISPASMODIC

Of the Profession.

Employed by all Obstetricians. A reliable remedy in DYSMENORRHŒA, NERVOUS DISORDERS, and as a UTERINE TONIC, giving tone and strength to the system. Free from all Narcotics. For new booklet, address

New York Pharmaceutical Company,

BEDFORD SPRINGS, MASSACHUSETTS.

"I CONSIDER

ESKAYS Albumenized FOOD

The Peer of Any Food

of like character upon the market'' is what a Pennsylvania physician writes. Equally favorable reports are received daily.

"I HAVE USED

ESKAYS Albumenized FOOD

In Cholera Infantum

where there was persistent emesis and succeeded in keeping ESKAY'S down where other foods were rejected,'' writes an Ohio physician.

Samples and Clinical Reports on Application

SMITH, KLINE & FRENCH CO., - Manufacturers, - - PHILADELPHIA, PA.

TABLE OF CONTENTS.

Renal Calculi, with Report of Cases. By Stuart McGuire, M.D. 233

Examination of the Blood in Disease. By M. H. Bowmann, M.D. 242

Climate: A Factor in the Treatment of Tuberculosis. By Francis Crosson, M.D. 245

Pneumonia 248

Significance of the Stool in Infantile Diarrhœas 249

Treatment of Influenza 251

Cancer of the Uterus and Its Treatment 252

The Relation Between Gall Stones and Appendicitis. By Dr. A. J. Ochsner 252

Proceedings of New York Academy of Medicine 253

The Etiology of Cancer 259

Las Vegas Hot Springs 264

Continued on page 9.

Prevent Accidents.

Very many physicians make it a routine rule to administer ALETRIS CORDIAL in teaspoonful doses four times a day to all of their pregnant patients for several weeks during the latter part of gestation. Experience has taught them that ALETRIS CORDIAL not only prevents miscarriage, but also facilitates parturition.

A sample bottle will be sent FREE to any physician who desires to test it, if he will pay the express charges.

RIO CHEMICAL COMPANY, St. Louis, Mo., U. S. A.

Guaiacol Carbonate

(Duotal.)

Creosote Carbonate

(Creosotal.)

These two Carbonates are now acknowledged to be the most pleasant, safe and effective remedies in the treatment of tuberculosis. An experience of over five years has established the fact that Creosote Carbonate and Guaiacol Carbonate are free from the noxious by-effects of the plain creosote and guaiacol, and exhibit only the therapeutic properties of these drugs. The neutral Carbonates cause neither irritation nor inflammation of the stomach or intestines, and abnormal fermentation and decomposition processes are stopped. No other guaiacol compound contains so high a percentage of chemically pure crystalline guaiacol as Duotal, namely: over 90%; while Creosotal contains 92% of pure creosote. The Carbonates are the only two intestinal antiseptics whose action extend as far as the ileum; but, as has been shown by thorough investigation, they cannot be found at the commencement of the large intestine when administered in ordinary doses.

Professor Dujardin-Beaumetz, in the Supplement to the Dictionary of Therapeutics, Paris, 1895, states:

> "From numerous observations, published both in France and abroad, it "appears that Carbonate of Guaiacol stimulates the appetite, facilitates "assimilation, invariably produces a considerable increase in weight, and "imparts to the system great resisting power. Its antiseptic action will "arrest the development of any microbes in the intestine and obviate the "generation of gases, which is always unpleasant. Fits of coughing will "decrease, the expectoration will be modified, fever as well as perspiration "at night will gradually disappear, and the patient will thus enjoy refreshing sleep."

Dr. Nied, Physician-in-Chief at St. Elizabeth's Hospital in Vienna, has treated last winter a number of female patients who were suffering from acute bronchitis, complicated in some cases by influenza, with Guaiacol Carbonate in doses of from 7½ grains to 22½ grains, twice daily, with excellent results. (*Allgemeine Wiener Medicinische Zeitung*, June, 1897).

Dr. Eschle in Professor Baumann's physiologico-chemical laboratory in the Medical Department of the University of Freiburg, found that Guaiacol Carbonate is the more thoroughly used up the smaller and more frequent the doses in which it is given. In phthisis, therefore, Eschle recommends the administration of a dose of 4½ to 7½ grains of Guaiacol Carbonate four times daily. (*Zeitschrift für Klinische Medizin*, Volume 29, 3 and 4).

Dr. Jacob, Chief at the University Medical Clinic of Professor Leyden in Berlin, has obtained very satisfactory effects from the use of Creosotal in a number of cases of pronounced phthisis, though comparatively small doses have been employed. Each patient began with 5 drops three times daily, increasing the dose three drops every day, until 25 drops were taken at a dose. At this they were kept for from one to four weeks, when the dose was diminished in a similar ratio, until only 10 drops were taken thrice daily; and then the ascending scale was begun again. (Inaugural Dissertation by Hans Nordt, University of Berlin, February, 1897.)

VON HEYDEN'S

ANTISEPTIC CREDÉ (Citrate of Silver, Heyden)
CREDÉ'S LACTATE OF SILVER
APOLYSIN
GUAIACOL CHEMICALLY PURE CRYSTALS
GUAIACOL PURE, LIQUID
GUAIACOL-SALOL
OLEO-CREOSOTE
OLEO-GUAIACOL
ORPHOL (Betanaphtol-Bismuth)
PHENOL-BISMUTH
XEROFORM (Tribromphenol-Bismuth)
ORTHO-CHLORPHENOL
PARA-CHLORPHENOL
PARA-CHLORSALOL

SCHERING & GLATZ, 55 Maiden Lane, New York,
Literature furnished on application. **Sole Agents for the United States and Canada.**

CONTENTS (Continued from Page 7).

Phenocoll in Malaria 265

Treatment of Congestion of the Liver 269

EDITORIAL 267

The Value of Sunshine.—Apes Not Our Ancestors.—Third Pan-American Medical Congress.

EDITORIAL NOTES AND COMMENT 270

BOOK REVIEWS 271

Rhinology, Laryngology and Otology, and their Significance in General Medicine. By E. P. Friedrich. M.D.—Diseases of Women. By E. C. Dudley, M.D.—Manual of the Diseases of the Eye. By Charles H. May. M.D.—A Practical Treatise of of Genito-Urinary and Venereal Diseases and Syphilis. By Robert A Taylor, A.M., M.D.

A Chestnut has a Burr
Opium a Habit
PAIN has relief in
FIVE-GRAIN Antikamnia Tablets
WHICH DO NOT DEPRESS THE HEART
DO NOT PRODUCE HABIT
ARE ACCURATE—SAFE—SURE
MADE SOLELY BY
The Antikamnia Chemical Company
ST. LOUIS, MO. U.S.A.

The Standard Medicine of the World.

HAYDEN'S VIBURNUM COMPOUND.

The Great

ANTISPASMODIC

Of the Profession.

Employed by all Obstetricians. A reliable remedy in DYSMENORRHŒA, NERVOUS DISORDERS, and as a UTERINE TONIC, giving tone and strength to the system. Free from all Narcotics. For new booklet, address

New York Pharmaceutical Company,

BEDFORD SPRINGS, MASSACHUSETTS.

"AS A

CHASER

after a Welsh Rabbit, I want nothing better than

LACTOPEPTINE TABLETS

says a prominent physician. They're good lobster chasers, too Try them yourself, Doctor.

The N. Y. Pharmacal Ass'n
Yonkers, N. Y.

Dose: 2 to 4.